Mansoura University

Faculty of Egineering

Mechanical Power Engineering Department

Thermodynamic Tables

In SI units

2nd Edition 2020

Table of contents

1. Thermodynamic principles

First Law: $\dot{Q}-\dot{W}+\dot{m}_{in}\left(h+\mathrm{v}^2/2+gz\right)_{in}-\dot{m}_{out}\left(h+\mathrm{v}^2/2+gz\right)_{out}=d\left[m_s\left(u+\mathrm{v}^2/2+gz\right)_s\right]/dt$

Second Law : $\int\left(\dot{q}dA/T\right)+dS_{irrev}/dt+\left(\dot{m}s\right)_{in}-\left(\dot{m}s\right)_{out}=d\left(ms\right)_{sys}/dt \Rightarrow Tds=du+Pdv=dh-vdP$

Coefficients of performance (COP) of heat engines:

By definition: $\eta_{engine}=|W/Q_h|$; $COP_{refrigerator}=|Q_c/W|$; $COP_{heatPump}=|Q_h/W|$; $|W|=|Q_h|-|Q_c|$

COP $_{reversible} \geq$ COP $_{irreversible}$. For reversible only: $|Q_h|/T_h = |Q_c|/T_c$ (*h: hot, c:cold*)

Availability: (portion that can be transformed into work): of heat: $Q\,(1-T_0/T)$; T_0 = surroundings T

of enthalpy (steady flow) $h-h_0-T_0\,(s-s_0)$; of internal energy (closed system) $u-u_0-T_0\,(s-s_0)+P_0(v-v_0)$

Equations of state

ideal gas – غاز تصوري	semi ideal gas – غاز شبه تصوري	vapor – بخار	liquid, solid – سائل، صلب
$Pv = R\,T \quad (R = \bar{R}/\mu)$ $u = c_v\,T;\ h = c_p\,T$ $\Delta s=c_v\,ln(T_2/T_1)+R\,ln(v_2/v_1)$ $\Delta s=c_p\,ln(T_2/T_1)-R\,ln(P_2/P_1)$ $c_v = R/(\gamma\text{-}1) \quad c_p = \gamma\,R/(\gamma\text{-}1)$	$Pv = R\,T \quad (R = \bar{R}/\mu)$ $\Delta u=\int(c_P(T)\text{-}R)dT;\ \Delta h=\int c_P(T)dT;$ $\Delta s=s^o(T_2)-s^o(T_1)-R\,ln(P_2/P_1)$ $s^o(T)=\int(c_P(T)/T)dT$ (See tables)	*For Wet vapor:* $P_{sat} \Leftrightarrow T_{sat}$ $v=x\,v_g+(1\text{-}x)\,v_f$ $u=x\,u_g+(1\text{-}x)\,u_f$ $h=x\,h_g+(1\text{-}x)\,h_f$ $s=x\,s_g+(1\text{-}x)\,s_f$ use sat. tables	*Low Pressure:* $v \sim const.\ c_p=c_v=C$ $v=v_{sat}(T),\ u=u_{sat}(T) \sim CT$ $h=h_{sat}(T)+v_{sat}\,(P-P_{sat})$ $h \sim C\,T\ ;\ s=s_{sat}(T)$
$\Delta s=0 \Rightarrow Pv^{\gamma}=const$ $\Rightarrow T_2/T_1=(P_2/P_1)^{(\gamma-1)/\gamma}$	$\Delta s=0 \Rightarrow P_2/P_1=P_r(T_2)/P_r(T_1)$ $v_2/v_1=v_r(T_2)/v_r(T_1)$ [P_r,v_r From ideal gas Tables]		
		Superheat: Tables	*High pressure: Tables*

For ideal gases, $\gamma = c_p/c_v \approx (f+2)/f$ where f is the number of degrees of freedom according to:

	Monatomic		Diatomic		Polyatomic	
	f	γ	f	γ	f	γ
Low T	3	1.67	3	1.67	3	1.67
Moderate T	3	1.67	5	1.40	6	1.33
High T	3	1.67	6	1.33	>7	

Van Der Waals eq.: $(P_R+3/v_{rm}^2)(3*v_{rm}\text{-}1)=8T_R$; $v_{rm}=8vP_c/3RT_c$; $P_R=P/P_c$;$T_R=T/T_c$	معادلة فان در فالز
$Z = Pv/RT;\ Z=f\,(P_R=P/P_c,\ T_R=T/T_c)$ From compressibility chart	الغازات الحقيقية
m_i=mass of $i \Rightarrow m_T=\Sigma m_i$; $x_i=m_i/m_T$; $n_i=m_i/\mu_i$; $n_T=\Sigma n_i$; $y_i=n_i/n_T$; $\mu_T=m_T/n_T$; $_i/P_{mix}=y_i$	مخاليط الغازات التصورية

Major issues to specify when addressing a problem

What is the system? What are balance equations? What are energy forms?	What is the process? Initial & final state properties? Adequate equations of state?	How many extensive properties None? Only 1? More than 1?

List of symbols:

A	Area	R	Specific gas constant		z	Height
c_p	const. pressure specific heat	S	Entropy		Z	Compressibility factor
c_v	const. volume specific heat	s	Specific entropy			
g	Acceleration of gravity	T	Temperature			
H	Enthalpy	t	Time			Greek
h	Specific enthalpy	U	Internal energy		γ	$c_p\,/\,c_v$
m	Mass	u	Specific internal energy		μ	molecular mass
$\dot{m}$	mass flow rate	v	Specific volume			
n	number of moles	v	Velocity			Subscripts
P	Pressure	W	Work		in	Entering
Q	Heat	$\dot{W}$	Power		out	Leaving
$\dot{Q}$	Heat flow rate	x	Dryness fraction		s	System
$\dot{q}$	Heat flow rate per unit area	x_i	Mass fraction of component i		sat	Saturation
$\bar{R}$	Universal gas constant	y_i	Mole fraction of component i		c	critical

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T C	P bar	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
1	0.0065709	0.0010001	192.44	4.1761	2376.3	4.1767	2502.7	0.01526	9.1291	0.075508	1731.1	9.2395	0.56292	0.017123
2	0.0070599	0.0010001	179.76	8.3911	2377.7	8.3918	2504.6	0.030607	9.1027	0.075367	1673.6	9.2632	0.56482	0.017176
3	0.0075808	0.0010001	168.01	12.603	2379	12.604	2506.4	0.045888	9.0765	0.075226	1619.1	9.2871	0.56672	0.01723
4	0.0081355	0.0010001	157.12	16.812	2380.4	16.813	2508.2	0.061103	9.0505	0.075084	1567.4	9.3113	0.56862	0.017284
5	0.0087258	0.0010001	147.01	21.019	2381.8	21.02	2510.1	0.076254	9.0248	0.074942	1518.3	9.3357	0.57052	0.017339
6	0.0093536	0.0010001	137.63	25.223	2383.2	25.224	2511.9	0.091342	8.9993	0.074799	1471.6	9.3604	0.57242	0.017394
7	0.010021	0.0010001	128.92	29.425	2384.5	29.426	2513.7	0.10637	8.9741	0.074655	1427.2	9.3853	0.57432	0.01745
8	0.01073	0.0010002	120.83	33.626	2385.9	33.627	2515.6	0.12133	8.9491	0.074511	1384.8	9.4103	0.57622	0.017507
9	0.011483	0.0010003	113.3	37.824	2387.3	37.825	2517.4	0.13624	8.9243	0.074366	1344.5	9.4357	0.57811	0.017564
10	0.012282	0.0010003	106.3	42.02	2388.6	42.021	2519.2	0.15109	8.8998	0.074221	1306	9.4612	0.58	0.017621
11	0.01313	0.0010004	99.787	46.215	2390	46.216	2521	0.16587	8.8754	0.074075	1269.2	9.4869	0.58188	0.017679
12	0.014028	0.0010005	93.719	50.408	2391.4	50.409	2522.9	0.18061	8.8513	0.073929	1234.1	9.5129	0.58376	0.017738
13	0.014981	0.0010007	88.064	54.6	2392.8	54.601	2524.7	0.19528	8.8274	0.073782	1200.5	9.539	0.58562	0.017797
14	0.01599	0.0010008	82.793	58.79	2394.1	58.792	2526.5	0.2099	8.8037	0.073634	1168.4	9.5653	0.58748	0.017857
15	0.017058	0.0010009	77.875	62.98	2395.5	62.981	2528.3	0.22446	8.7803	0.073486	1137.6	9.5919	0.58933	0.017918
16	0.018188	0.0010011	73.286	67.168	2396.9	67.17	2530.2	0.23897	8.757	0.073337	1108.1	9.6186	0.59117	0.017978
17	0.019384	0.0010013	69.001	71.355	2398.2	71.357	2532	0.25343	8.7339	0.073188	1079.9	9.6455	0.593	0.01804
18	0.020647	0.0010014	64.998	75.542	2399.6	75.544	2533.8	0.26783	8.7111	0.073038	1052.7	9.6725	0.59482	0.018102
19	0.021983	0.0010016	61.256	79.727	2401	79.729	2535.6	0.28218	8.6884	0.072887	1026.7	9.6998	0.59663	0.018164
20	0.023393	0.0010018	57.757	83.912	2402.3	83.914	2537.4	0.29648	8.666	0.072736	1001.6	9.7272	0.59842	0.018227
21	0.024882	0.0010021	54.483	88.096	2403.7	88.098	2539.3	0.31073	8.6437	0.072584	977.59	9.7548	0.60019	0.018291
22	0.026453	0.0010023	51.418	92.279	2405	92.282	2541.1	0.32493	8.6217	0.072432	954.46	9.7826	0.60196	0.018355
23	0.028111	0.0010025	48.548	96.462	2406.4	96.465	2542.9	0.33908	8.5998	0.072279	932.19	9.8105	0.6037	0.01842
24	0.029858	0.0010028	45.858	100.64	2407.8	100.65	2544.7	0.35318	8.5781	0.072126	910.76	9.8386	0.60544	0.018485
25	0.031699	0.001003	43.337	104.83	2409.1	104.83	2546.5	0.36722	8.5566	0.071972	890.11	9.8669	0.60715	0.01855
26	0.033639	0.0010033	40.973	109.01	2410.5	109.01	2548.3	0.38123	8.5353	0.071818	870.2	9.8953	0.60885	0.018617
27	0.035681	0.0010035	38.754	113.19	2411.8	113.19	2550.1	0.39518	8.5142	0.071663	851.01	9.9238	0.61053	0.018683
28	0.037831	0.0010038	36.672	117.37	2413.2	117.37	2551.9	0.40908	8.4933	0.071507	832.49	9.9525	0.61219	0.01875
29	0.040092	0.0010041	34.716	121.55	2414.6	121.55	2553.7	0.42294	8.4725	0.071351	814.62	9.9814	0.61383	0.018818
30	0.04247	0.0010044	32.878	125.73	2415.9	125.73	2555.5	0.43675	8.452	0.071194	797.36	10.01	0.61546	0.018887
31	0.044969	0.0010047	31.151	129.91	2417.3	129.91	2557.3	0.45052	8.4316	0.071037	780.68	10.039	0.61706	0.018955
32	0.047596	0.001005	29.526	134.09	2418.6	134.09	2559.2	0.46424	8.4113	0.070879	764.56	10.069	0.61865	0.019025
33	0.050354	0.0010054	27.998	138.27	2420	138.27	2561	0.47792	8.3913	0.070721	748.98	10.098	0.62021	0.019095
34	0.053251	0.0010057	26.56	142.45	2421.3	142.45	2562.8	0.49155	8.3714	0.070562	733.9	10.128	0.62176	0.019165
35	0.05629	0.001006	25.205	146.63	2422.7	146.63	2564.5	0.50513	8.3517	0.070402	719.31	10.157	0.62328	0.019236
36	0.059479	0.0010064	23.929	150.81	2424	150.81	2566.3	0.51867	8.3321	0.070242	705.19	10.187	0.62479	0.019307
37	0.062823	0.0010068	22.727	154.99	2425.4	154.99	2568.1	0.53217	8.3127	0.070081	691.51	10.217	0.62627	0.019379
38	0.066328	0.0010071	21.593	159.17	2426.7	159.17	2569.9	0.54562	8.2935	0.06992	678.26	10.247	0.62773	0.019452
39	0.070002	0.0010075	20.524	163.35	2428	163.35	2571.7	0.55903	8.2745	0.069759	665.42	10.277	0.62917	0.019525
40	0.073849	0.0010079	19.515	167.53	2429.4	167.53	2573.5	0.5724	8.2555	0.069596	652.97	10.308	0.63058	0.019599

T C	P bar	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
41	0.077878	0.0010083	18.563	171.71	2430.7	171.71	2575.3	0.58573	8.2368	0.069434	640.89	10.338	0.63198	0.019673
42	0.082096	0.0010087	17.664	175.88	2432.1	175.89	2577.1	0.59901	8.2182	0.06927	629.18	10.368	0.63335	0.019747
43	0.086508	0.0010091	16.814	180.06	2433.4	180.07	2578.9	0.61225	8.1998	0.069106	617.81	10.399	0.63471	0.019823
44	0.091124	0.0010095	16.011	184.24	2434.7	184.25	2580.6	0.62545	8.1815	0.068942	606.77	10.43	0.63604	0.019898
45	0.09595	0.0010099	15.252	188.43	2436.1	188.43	2582.4	0.63861	8.1633	0.068777	596.05	10.461	0.63734	0.019975
46	0.10099	0.0010104	14.534	192.61	2437.4	192.62	2584.2	0.65173	8.1453	0.068611	585.64	10.492	0.63863	0.020052
47	0.10627	0.0010108	13.855	196.79	2438.7	196.8	2586	0.66481	8.1275	0.068445	575.52	10.523	0.63989	0.020129
48	0.11177	0.0010112	13.212	200.97	2440.1	200.98	2587.8	0.67785	8.1098	0.068279	565.69	10.554	0.64114	0.020207
49	0.11752	0.0010117	12.603	205.15	2441.4	205.16	2589.5	0.69085	8.0922	0.068112	556.13	10.585	0.64236	0.020286
50	0.12352	0.0010121	12.027	209.33	2442.7	209.34	2591.3	0.70381	8.0748	0.067944	546.83	10.616	0.64355	0.020365
51	0.12978	0.0010126	11.481	213.51	2444.1	213.52	2593.1	0.71673	8.0576	0.067776	537.79	10.648	0.64473	0.020444
52	0.13631	0.0010131	10.963	217.69	2445.4	217.71	2594.8	0.72961	8.0404	0.067607	528.99	10.679	0.64588	0.020525
53	0.14312	0.0010136	10.472	221.87	2446.7	221.89	2596.6	0.74245	8.0234	0.067438	520.42	10.711	0.64702	0.020605
54	0.15022	0.0010141	10.006	226.06	2448	226.07	2598.3	0.75526	8.0066	0.067268	512.08	10.743	0.64813	0.020687
55	0.15762	0.0010146	9.5643	230.24	2449.3	230.26	2600.1	0.76802	7.9898	0.067098	503.96	10.774	0.64922	0.020769
56	0.16533	0.0010151	9.1448	234.42	2450.7	234.44	2601.8	0.78075	7.9732	0.066927	496.05	10.806	0.65028	0.020851
57	0.17336	0.0010156	8.7466	238.61	2452	238.62	2603.6	0.79344	7.9568	0.066755	488.34	10.838	0.65133	0.020934
58	0.18171	0.0010161	8.3683	242.79	2453.3	242.81	2605.3	0.8061	7.9404	0.066584	480.83	10.87	0.65236	0.021018
59	0.19041	0.0010166	8.0089	246.98	2454.6	246.99	2607.1	0.81871	7.9242	0.066411	473.51	10.902	0.65336	0.021102
60	0.19946	0.0010171	7.6672	251.16	2455.9	251.18	2608.8	0.83129	7.9081	0.066238	466.38	10.935	0.65435	0.021187
61	0.20888	0.0010177	7.3424	255.35	2457.2	255.37	2610.6	0.84384	7.8922	0.066065	459.42	10.967	0.65531	0.021272
62	0.21867	0.0010182	7.0335	259.53	2458.5	259.55	2612.3	0.85634	7.8764	0.065891	452.63	10.999	0.65625	0.021358
63	0.22885	0.0010188	6.7396	263.72	2459.8	263.74	2614	0.86882	7.8607	0.065716	446.01	11.032	0.65718	0.021445
64	0.23943	0.0010193	6.4598	267.9	2461.1	267.93	2615.8	0.88125	7.8451	0.065541	439.55	11.064	0.65808	0.021532
65	0.25042	0.0010199	6.1935	272.09	2462.4	272.12	2617.5	0.89365	7.8296	0.065366	433.24	11.097	0.65896	0.02162
66	0.26183	0.0010204	5.9399	276.28	2463.7	276.3	2619.2	0.90602	7.8142	0.06519	427.09	11.129	0.65983	0.021708
67	0.27368	0.001021	5.6984	280.47	2465	280.49	2621	0.91835	7.799	0.065013	421.08	11.162	0.66067	0.021797
68	0.28599	0.0010216	5.4682	284.65	2466.3	284.68	2622.7	0.93064	7.7839	0.064836	415.21	11.195	0.6615	0.021887
69	0.29876	0.0010222	5.2488	288.84	2467.6	288.87	2624.4	0.94291	7.7689	0.064659	409.47	11.228	0.6623	0.021977
70	0.31201	0.0010228	5.0395	293.03	2468.9	293.07	2626.1	0.95513	7.754	0.064481	403.87	11.26	0.66309	0.022068
71	0.32575	0.0010234	4.84	297.22	2470.1	297.26	2627.8	0.96733	7.7392	0.064302	398.4	11.293	0.66386	0.022159
72	0.34	0.001024	4.6496	301.41	2471.4	301.45	2629.5	0.97949	7.7246	0.064123	393.06	11.326	0.66461	0.022251
73	0.35478	0.0010246	4.468	305.61	2472.7	305.64	2631.2	0.99161	7.71	0.063944	387.83	11.359	0.66535	0.022344
74	0.37009	0.0010252	4.2945	309.8	2474	309.84	2632.9	1.0037	7.6955	0.063764	382.72	11.393	0.66606	0.022438
75	0.38595	0.0010258	4.1289	313.99	2475.2	314.03	2634.6	1.0158	7.6812	0.063583	377.72	11.426	0.66676	0.022531
76	0.40239	0.0010265	3.9708	318.18	2476.5	318.22	2636.3	1.0278	7.667	0.063402	372.84	11.459	0.66744	0.022626
77	0.41941	0.0010271	3.8197	322.38	2477.8	322.42	2638	1.0398	7.6528	0.06322	368.06	11.492	0.6681	0.022721
78	0.43703	0.0010277	3.6752	326.57	2479	326.62	2639.7	1.0517	7.6388	0.063038	363.38	11.526	0.66875	0.022817
79	0.45527	0.0010284	3.5372	330.77	2480.3	330.81	2641.3	1.0637	7.6249	0.062856	358.81	11.559	0.66938	0.022914
80	0.47414	0.0010291	3.4052	334.96	2481.6	335.01	2643	1.0756	7.6111	0.062673	354.33	11.592	0.66999	0.023011

T C	P bar	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
81	0.49367	0.0010297	3.2789	339.16	2482.8	339.21	2644.7	1.0874	7.5973	0.062489	349.95	11.626	0.67058	0.023109
82	0.51387	0.0010304	3.1581	343.36	2484.1	343.41	2646.4	1.0993	7.5837	0.062305	345.66	11.659	0.67116	0.023207
83	0.53476	0.0010311	3.0425	347.56	2485.3	347.61	2648	1.1111	7.5702	0.062121	341.47	11.693	0.67173	0.023307
84	0.55635	0.0010317	2.9318	351.76	2486.6	351.81	2649.7	1.1229	7.5567	0.061936	337.36	11.727	0.67228	0.023406
85	0.57867	0.0010324	2.8258	355.95	2487.8	356.01	2651.3	1.1346	7.5434	0.06175	333.33	11.76	0.67281	0.023507
86	0.60173	0.0010331	2.7244	360.16	2489	360.22	2653	1.1463	7.5302	0.061565	329.39	11.794	0.67333	0.023608
87	0.62556	0.0010338	2.6271	364.36	2490.3	364.42	2654.6	1.158	7.517	0.061378	325.52	11.828	0.67383	0.02371
88	0.65017	0.0010345	2.534	368.56	2491.5	368.63	2656.3	1.1696	7.504	0.061191	321.74	11.861	0.67432	0.023812
89	0.67558	0.0010352	2.4447	372.76	2492.7	372.83	2657.9	1.1813	7.491	0.061004	318.03	11.895	0.67479	0.023916
90	0.70182	0.001036	2.3591	376.97	2494	377.04	2659.5	1.1929	7.4781	0.060816	314.4	11.929	0.67525	0.024019
91	0.7289	0.0010367	2.277	381.17	2495.2	381.25	2661.2	1.2044	7.4653	0.060628	310.84	11.963	0.6757	0.024124
92	0.75684	0.0010374	2.1982	385.38	2496.4	385.46	2662.8	1.216	7.4526	0.060439	307.35	11.997	0.67613	0.024229
93	0.78568	0.0010381	2.1227	389.58	2497.6	389.67	2664.4	1.2275	7.44	0.06025	303.92	12.031	0.67654	0.024335
94	0.81541	0.0010389	2.0502	393.79	2498.8	393.88	2666	1.2389	7.4275	0.06006	300.57	12.065	0.67695	0.024442
95	0.84608	0.0010396	1.9806	398	2500	398.09	2667.6	1.2504	7.4151	0.05987	297.28	12.099	0.67734	0.024549
96	0.87771	0.0010404	1.9137	402.21	2501.2	402.3	2669.2	1.2618	7.4027	0.059679	294.05	12.133	0.67771	0.024657
97	0.9103	0.0010411	1.8496	406.42	2502.4	406.52	2670.8	1.2732	7.3904	0.059488	290.88	12.167	0.67808	0.024766
98	0.9439	0.0010419	1.7879	410.63	2503.6	410.73	2672.4	1.2846	7.3783	0.059296	287.78	12.201	0.67843	0.024875
99	0.97852	0.0010427	1.7287	414.85	2504.8	414.95	2674	1.2959	7.3661	0.059104	284.73	12.235	0.67877	0.024985
100	1.0142	0.0010435	1.6718	419.06	2506	419.17	2675.6	1.3072	7.3541	0.058912	281.74	12.269	0.67909	0.025096
102	1.0887	0.001045	1.5644	427.49	2508.4	427.61	2678.7	1.3297	7.3303	0.058525	275.93	12.338	0.67971	0.02532
104	1.1678	0.0010466	1.4652	435.93	2510.7	436.05	2681.8	1.3522	7.3068	0.058137	270.33	12.406	0.68027	0.025547
106	1.2515	0.0010483	1.3733	444.37	2513.1	444.5	2684.9	1.3745	7.2836	0.057747	264.93	12.475	0.68079	0.025777
108	1.3401	0.0010499	1.2882	452.81	2515.4	452.95	2688	1.3967	7.2607	0.057356	259.72	12.543	0.68126	0.026009
110	1.4338	0.0010516	1.2093	461.26	2517.7	461.42	2691.1	1.4188	7.2381	0.056962	254.7	12.612	0.68169	0.026245
112	1.5328	0.0010533	1.1361	469.72	2520	469.88	2694.1	1.4408	7.2157	0.056567	249.85	12.681	0.68207	0.026483
114	1.6374	0.001055	1.068	478.18	2522.2	478.35	2697.1	1.4628	7.1937	0.05617	245.17	12.749	0.68241	0.026724
116	1.7477	0.0010568	1.0048	486.65	2524.4	486.83	2700.1	1.4846	7.1719	0.055771	240.65	12.818	0.68271	0.026969
118	1.8641	0.0010585	0.94598	495.12	2526.7	495.32	2703	1.5063	7.1504	0.05537	236.28	12.887	0.68297	0.027216
120	1.9867	0.0010603	0.89121	503.6	2528.9	503.81	2705.9	1.5279	7.1291	0.054968	232.05	12.956	0.68319	0.027467
122	2.1159	0.0010622	0.84019	512.09	2531	512.31	2708.8	1.5494	7.1081	0.054564	227.97	13.025	0.68337	0.02772
124	2.2518	0.001064	0.79261	520.58	2533.2	520.82	2711.7	1.5709	7.0873	0.054159	224.01	13.094	0.68351	0.027977
126	2.3947	0.0010659	0.74821	529.08	2535.3	529.33	2714.5	1.5922	7.0668	0.053751	220.19	13.163	0.68361	0.028236
128	2.545	0.0010678	0.70675	537.58	2537.4	537.85	2717.3	1.6135	7.0465	0.053343	216.48	13.232	0.68367	0.028499
130	2.7028	0.0010697	0.668	546.09	2539.5	546.38	2720.1	1.6346	7.0264	0.052932	212.9	13.301	0.6837	0.028765
132	2.8685	0.0010717	0.63177	554.61	2541.6	554.92	2722.8	1.6557	7.0066	0.05252	209.42	13.37	0.68369	0.029034
134	3.0423	0.0010736	0.59786	563.14	2543.6	563.47	2725.5	1.6767	6.9869	0.052106	206.05	13.439	0.68364	0.029306
136	3.2245	0.0010757	0.56611	571.68	2545.7	572.02	2728.2	1.6976	6.9675	0.051691	202.78	13.508	0.68356	0.029581
138	3.4154	0.0010777	0.53636	580.22	2547.6	580.59	2730.8	1.7185	6.9483	0.051274	199.62	13.578	0.68345	0.029859
140	3.6154	0.0010798	0.50845	588.77	2549.6	589.16	2733.4	1.7392	6.9293	0.050856	196.54	13.647	0.6833	0.03014

T C	P bar	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
142	3.8247	0.0010818	0.48227	597.33	2551.6	597.74	2736	1.7599	6.9105	0.050436	193.56	13.716	0.68312	0.030425
144	4.0437	0.001084	0.45769	605.9	2553.5	606.34	2738.5	1.7805	6.8919	0.050015	190.66	13.785	0.6829	0.030713
146	4.2726	0.0010861	0.43459	614.48	2555.4	614.94	2741	1.801	6.8734	0.049592	187.85	13.854	0.68265	0.031004
148	4.5118	0.0010883	0.41288	623.06	2557.2	623.56	2743.5	1.8214	6.8552	0.049167	185.12	13.923	0.68236	0.031298
150	4.7616	0.0010905	0.39245	631.66	2559.1	632.18	2745.9	1.8418	6.8371	0.048741	182.46	13.992	0.68204	0.031595
152	5.0225	0.0010927	0.37323	640.27	2560.9	640.81	2748.3	1.8621	6.8192	0.048314	179.88	14.061	0.68169	0.031896
154	5.2946	0.001095	0.35512	648.88	2562.6	649.46	2750.7	1.8823	6.8014	0.047885	177.37	14.13	0.68131	0.0322
156	5.5784	0.0010973	0.33805	657.51	2564.4	658.12	2753	1.9025	6.7838	0.047455	174.93	14.199	0.68089	0.032507
158	5.8742	0.0010996	0.32196	666.14	2566.1	666.79	2755.2	1.9225	6.7664	0.047024	172.55	14.268	0.68044	0.032817
160	6.1823	0.001102	0.30678	674.79	2567.8	675.47	2757.4	1.9426	6.7491	0.046591	170.24	14.337	0.67996	0.033131
162	6.5033	0.0011044	0.29245	683.45	2569.4	684.17	2759.6	1.9625	6.732	0.046156	167.99	14.406	0.67944	0.033448
164	6.8373	0.0011068	0.27892	692.12	2571.1	692.88	2761.8	1.9824	6.715	0.045721	165.8	14.475	0.67889	0.033768
166	7.1848	0.0011093	0.26612	700.8	2572.6	701.6	2763.9	2.0022	6.6982	0.045284	163.66	14.544	0.67831	0.034091
168	7.5462	0.0011117	0.25403	709.5	2574.2	710.33	2765.9	2.022	6.6815	0.044846	161.58	14.612	0.6777	0.034418
170	7.9219	0.0011143	0.24259	718.2	2575.7	719.08	2767.9	2.0417	6.665	0.044406	159.55	14.681	0.67705	0.034748
172	8.3122	0.0011168	0.23176	726.92	2577.2	727.85	2769.9	2.0613	6.6485	0.043965	157.57	14.75	0.67637	0.035081
174	8.7176	0.0011194	0.2215	735.65	2578.7	736.63	2771.8	2.0809	6.6322	0.043523	155.65	14.819	0.67566	0.035418
176	9.1384	0.001122	0.21179	744.39	2580.1	745.42	2773.6	2.1004	6.6161	0.04308	153.76	14.888	0.67491	0.035758
178	9.5751	0.0011247	0.20258	753.15	2581.5	754.23	2775.4	2.1198	6.6	0.042636	151.93	14.957	0.67413	0.036102
180	10.028	0.0011274	0.19384	761.92	2582.8	763.05	2777.2	2.1392	6.584	0.04219	150.14	15.025	0.67332	0.036449
182	10.498	0.0011301	0.18555	770.71	2584.1	771.9	2778.9	2.1586	6.5682	0.041743	148.39	15.094	0.67248	0.036799
184	10.985	0.0011329	0.17769	779.51	2585.4	780.75	2780.6	2.1779	6.5525	0.041296	146.68	15.163	0.6716	0.037153
186	11.489	0.0011357	0.17021	788.32	2586.7	789.63	2782.2	2.1971	6.5369	0.040847	145.01	15.232	0.67068	0.03751
188	12.011	0.0011386	0.16311	797.15	2587.9	798.52	2783.8	2.2163	6.5213	0.040397	143.38	15.301	0.66974	0.037871
190	12.552	0.0011415	0.15636	806	2589	807.43	2785.3	2.2355	6.5059	0.039945	141.78	15.37	0.66875	0.038236
192	13.112	0.0011444	0.14994	814.86	2590.1	816.36	2786.7	2.2546	6.4906	0.039493	140.22	15.439	0.66774	0.038604
194	13.691	0.0011474	0.14383	823.74	2591.2	825.31	2788.1	2.2736	6.4754	0.03904	138.7	15.508	0.66668	0.038975
196	14.29	0.0011504	0.13802	832.63	2592.3	834.28	2789.5	2.2926	6.4602	0.038586	137.21	15.577	0.6656	0.039351
198	14.909	0.0011534	0.13248	841.54	2593.2	843.26	2790.8	2.3116	6.4451	0.038131	135.75	15.646	0.66447	0.03973
200	15.549	0.0011565	0.12721	850.47	2594.2	852.27	2792	2.3305	6.4302	0.037675	134.32	15.715	0.66331	0.040113
205	17.243	0.0011645	0.11508	872.87	2596.4	874.88	2794.8	2.3777	6.393	0.03653	130.87	15.888	0.66026	0.041088
210	19.077	0.0011727	0.10429	895.39	2598.3	897.63	2797.3	2.4245	6.3563	0.035381	127.6	16.061	0.65697	0.042088
215	21.058	0.0011813	0.094679	918.04	2599.9	920.53	2799.3	2.4712	6.32	0.034226	124.49	16.236	0.65343	0.043114
220	23.196	0.0011902	0.086092	940.82	2601.2	943.58	2800.9	2.5177	6.284	0.033067	121.52	16.411	0.64965	0.04417
225	25.497	0.0011994	0.078403	963.74	2602.2	966.8	2802.1	2.564	6.2483	0.031903	118.68	16.587	0.64561	0.045256
230	27.971	0.001209	0.071503	986.81	2602.9	990.19	2802.9	2.6101	6.2128	0.030736	115.96	16.765	0.64131	0.046375
235	30.625	0.001219	0.065298	1010	2603.2	1013.8	2803.2	2.6561	6.1775	0.029566	113.36	16.944	0.63672	0.047531
240	33.469	0.0012295	0.059705	1033.4	2603.1	1037.6	2803	2.702	6.1423	0.028394	110.85	17.125	0.63185	0.048728
245	36.512	0.0012403	0.054654	1057	2602.7	1061.5	2802.2	2.7478	6.1072	0.027219	108.44	17.308	0.62668	0.04997
250	39.762	0.0012517	0.050083	1080.8	2601.8	1085.8	2800.9	2.7935	6.0721	0.026043	106.11	17.495	0.62119	0.051263

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255	43.229	0.0012636	0.045938	1104.8	2600.5	1110.2	2799.1	2.8392	6.0369	0.024866	103.86	17.684	0.61538	0.052614
260	46.923	0.0012761	0.042173	1129	2598.7	1135	2796.6	2.8849	6.0016	0.023689	101.68	17.877	0.60924	0.054032
265	50.853	0.0012892	0.038746	1153.4	2596.5	1160	2793.5	2.9307	5.9661	0.022512	99.561	18.074	0.60275	0.055527
270	55.03	0.001303	0.035621	1178.1	2593.7	1185.3	2789.7	2.9765	5.9304	0.021337	97.497	18.277	0.59591	0.057111
275	59.464	0.0013175	0.032766	1203.1	2590.3	1210.9	2785.2	3.0224	5.8944	0.020163	95.481	18.485	0.58871	0.058801
280	64.166	0.0013328	0.030153	1228.3	2586.4	1236.9	2779.9	3.0685	5.8579	0.018993	93.506	18.7	0.58115	0.060614
285	69.147	0.0013491	0.027756	1253.9	2581.8	1263.2	2773.7	3.1147	5.8209	0.017826	91.567	18.922	0.57323	0.062574
290	74.418	0.0013663	0.025555	1279.9	2576.5	1290	2766.7	3.1612	5.7834	0.016664	89.657	19.154	0.56496	0.064708
295	79.991	0.0013846	0.023529	1306.2	2570.5	1317.3	2758.7	3.208	5.7451	0.015508	87.769	19.396	0.55635	0.067052
300	85.879	0.0014042	0.02166	1332.9	2563.6	1345	2749.6	3.2552	5.7059	0.01436	85.896	19.651	0.54743	0.06965
305	92.094	0.0014252	0.019933	1360.2	2555.9	1373.3	2739.4	3.3028	5.6657	0.013219	84.032	19.921	0.53821	0.072555
310	98.651	0.0014479	0.018335	1387.9	2547.1	1402.2	2727.9	3.351	5.6244	0.012089	82.168	20.207	0.52875	0.075836
315	105.56	0.0014724	0.016851	1416.3	2537.2	1431.8	2715.1	3.3998	5.5816	0.01097	80.296	20.514	0.51906	0.079582
320	112.84	0.001499	0.015471	1445.3	2526	1462.2	2700.6	3.4494	5.5372	0.0098644	78.408	20.846	0.5092	0.083907
321	114.34	0.0015047	0.015206	1451.2	2523.6	1468.4	2697.5	3.4595	5.5281	0.0096451	78.027	20.916	0.50721	0.084853
322	115.86	0.0015104	0.014945	1457.1	2521.2	1474.6	2694.3	3.4695	5.5189	0.0094264	77.645	20.987	0.50521	0.08583
323	117.4	0.0015162	0.014688	1463.1	2518.6	1480.9	2691.1	3.4797	5.5096	0.0092084	77.262	21.059	0.50321	0.086839
324	118.95	0.0015222	0.014434	1469.1	2516.1	1487.2	2687.7	3.4898	5.5003	0.0089911	76.878	21.133	0.5012	0.087882
325	120.51	0.0015283	0.014183	1475.1	2513.4	1493.5	2684.3	3.5	5.4908	0.0087744	76.492	21.208	0.49919	0.088959
326	122.09	0.0015345	0.013936	1481.2	2510.7	1499.9	2680.8	3.5103	5.4813	0.0085585	76.104	21.284	0.49718	0.090074
327	123.69	0.0015408	0.013692	1487.3	2507.9	1506.3	2677.3	3.5206	5.4717	0.0083434	75.715	21.362	0.49516	0.091227
328	125.3	0.0015473	0.013451	1493.4	2505.1	1512.8	2673.6	3.5309	5.4619	0.008129	75.324	21.442	0.49313	0.092421
329	126.93	0.0015539	0.013213	1499.6	2502.1	1519.3	2669.9	3.5413	5.4521	0.0079154	74.93	21.523	0.49111	0.093659
330	128.58	0.0015606	0.012979	1505.8	2499.2	1525.9	2666	3.5518	5.4422	0.0077026	74.535	21.606	0.48907	0.094941
331	130.24	0.0015675	0.012747	1512.1	2496.1	1532.5	2662.1	3.5623	5.4321	0.0074906	74.138	21.691	0.48704	0.096272
332	131.93	0.0015746	0.012518	1518.4	2492.9	1539.1	2658.1	3.5729	5.4219	0.0072796	73.738	21.778	0.48499	0.097653
333	133.62	0.0015818	0.012292	1524.7	2489.7	1545.9	2653.9	3.5835	5.4116	0.0070694	73.335	21.867	0.48295	0.099087
334	135.34	0.0015892	0.012068	1531.1	2486.4	1552.6	2649.7	3.5943	5.4012	0.0068601	72.93	21.958	0.4809	0.10058
335	137.07	0.0015967	0.011847	1537.6	2483	1559.5	2645.4	3.605	5.3906	0.0066518	72.522	22.051	0.47885	0.10213
336	138.82	0.0016045	0.011629	1544.1	2479.5	1566.3	2640.9	3.6159	5.3799	0.0064444	72.111	22.146	0.47679	0.10374
337	140.59	0.0016124	0.011413	1550.6	2475.9	1573.3	2636.3	3.6268	5.3691	0.0062381	71.697	22.244	0.47473	0.10542
338	142.38	0.0016206	0.0112	1557.2	2472.2	1580.3	2631.6	3.6378	5.3581	0.0060328	71.279	22.345	0.47266	0.10718
339	144.18	0.0016289	0.010989	1563.9	2468.4	1587.4	2626.8	3.6489	5.3469	0.0058286	70.857	22.448	0.47058	0.109
340	146.01	0.0016376	0.010781	1570.6	2464.4	1594.5	2621.8	3.6601	5.3356	0.0056255	70.431	22.554	0.46851	0.11091
341	147.85	0.0016464	0.010574	1577.4	2460.4	1601.8	2616.8	3.6714	5.3241	0.0054235	70.001	22.663	0.46642	0.11291
342	149.71	0.0016555	0.01037	1584.3	2456.3	1609.1	2611.5	3.6828	5.3124	0.0052228	69.567	22.776	0.46433	0.115
343	151.59	0.0016649	0.010168	1591.2	2452	1616.4	2606.1	3.6943	5.3005	0.0050233	69.127	22.892	0.46224	0.11718
344	153.49	0.0016746	0.0099674	1598.2	2447.6	1623.9	2600.6	3.7059	5.2885	0.0048251	68.683	23.011	0.46013	0.11947
345	155.41	0.0016846	0.009769	1605.3	2443.1	1631.5	2594.9	3.7176	5.2762	0.0046282	68.232	23.135	0.45803	0.12188
346	157.34	0.0016949	0.0095724	1612.5	2438.4	1639.1	2589	3.7295	5.2636	0.0044326	67.775	23.262	0.45591	0.1244

T C	P bar	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
347	159.3	0.0017056	0.0093776	1619.7	2433.6	1646.9	2583	3.7414	5.2509	0.0042385	67.312	23.394	0.45379	0.12706
348	161.28	0.0017166	0.0091844	1627.1	2428.6	1654.8	2576.7	3.7536	5.2379	0.0040459	66.842	23.531	0.45165	0.12986
349	163.28	0.0017281	0.0089927	1634.6	2423.5	1662.8	2570.3	3.7659	5.2246	0.0038549	66.363	23.673	0.44952	0.13282
350	165.29	0.00174	0.0088024	1642.1	2418.1	1670.9	2563.6	3.7784	5.211	0.0036654	65.877	23.82	0.44737	0.13595
351	167.33	0.0017524	0.0086134	1649.8	2412.6	1679.1	2556.8	3.791	5.1971	0.0034776	65.381	23.974	0.44522	0.13926
352	169.39	0.0017654	0.0084257	1657.6	2406.9	1687.5	2549.6	3.8039	5.1829	0.0032916	64.875	24.133	0.44305	0.14277
353	171.47	0.0017789	0.008239	1665.6	2401	1696.1	2542.3	3.817	5.1683	0.0031074	64.358	24.3	0.44089	0.1465
354	173.58	0.001793	0.0080533	1673.7	2394.8	1704.8	2534.6	3.8303	5.1534	0.0029251	63.829	24.474	0.43871	0.15048
355	175.7	0.0018079	0.0078684	1682	2388.4	1713.7	2526.6	3.8439	5.138	0.0027448	63.286	24.656	0.43654	0.15473
356	177.85	0.0018235	0.0076841	1690.4	2381.7	1722.8	2518.4	3.8577	5.1222	0.0025666	62.73	24.848	0.43436	0.15929
357	180.02	0.0018399	0.0075003	1699	2374.7	1732.2	2509.8	3.8719	5.1059	0.0023906	62.158	25.049	0.43218	0.1642
358	182.21	0.0018573	0.0073168	1707.9	2367.5	1741.7	2500.8	3.8864	5.0891	0.002217	61.568	25.261	0.43001	0.1695
359	184.42	0.0018758	0.0071332	1717	2359.8	1751.5	2491.4	3.9014	5.0717	0.0020458	60.959	25.486	0.42786	0.17524
360	186.66	0.0018954	0.0069493	1726.3	2351.8	1761.7	2481.5	3.9167	5.0536	0.0018772	60.329	25.724	0.42572	0.18151
361	188.92	0.0019164	0.0067649	1735.9	2343.3	1772.1	2471.1	3.9325	5.0347	0.0017114	59.676	25.978	0.42363	0.18839
362	191.21	0.0019388	0.0065795	1745.8	2334.4	1782.9	2460.2	3.9488	5.0151	0.0015485	58.998	26.25	0.42159	0.19598
363	193.52	0.0019629	0.0063925	1756.1	2324.8	1794.1	2448.6	3.9656	4.9945	0.0013889	58.292	26.542	0.41965	0.20445
364	195.85	0.0019889	0.0062035	1766.7	2314.7	1805.7	2436.2	3.9831	4.9727	0.0012326	57.555	26.859	0.41788	0.21399
365	198.21	0.0020172	0.0060115	1777.8	2303.8	1817.8	2422.9	4.0014	4.9497	0.0010801	56.784	27.203	0.41637	0.22488
366	200.6	0.002048	0.0058157	1789.4	2292	1830.5	2408.7	4.0205	4.9251	0.00093155	55.973	27.583	0.41529	0.23749
367	203.02	0.0020821	0.0056145	1801.6	2279.1	1843.8	2393.1	4.0406	4.8986	0.00078752	55.115	28.005	0.41493	0.25243
368	205.46	0.0021201	0.0054061	1814.5	2264.8	1858.1	2375.9	4.0621	4.8697	0.00064847	54.196	28.481	0.41576	0.27058
369	207.93	0.0021636	0.0051875	1828.5	2248.8	1873.5	2356.6	4.0853	4.8376	0.00051508	53.194	29.029	0.41861	0.29347
370	210.44	0.0022152	0.0049544	1844.1	2230.3	1890.7	2334.5	4.1112	4.8012	0.00038822	52.069	29.678	0.42504	0.32384
371	212.97	0.0022798	0.0046995	1862	2208.2	1910.6	2308.3	4.1412	4.7586	0.00026921	50.747	30.477	0.43841	0.36732
372	215.54	0.0023682	0.0044084	1884.2	2180.5	1935.3	2275.5	4.1785	4.7059	0.00016007	49.075	31.528	0.46744	0.4381
373	218.14	0.0025083	0.004045	1915	2141.6	1969.7	2229.8	4.2308	4.6334	6.48E-05	47.812	33.706	0.54793	0.59067

P bar	T C	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
0.02	17.49	0.0010014	66.987	73.426	2398.9	73.428	2532.9	0.26056	8.7226	0.073114	1066.3	9.6588	0.5939	0.01807
0.04	28.96	0.0010041	34.791	121.38	2414.5	121.39	2553.7	0.42239	8.4734	0.071357	815.31	9.9802	0.61377	0.018816
0.06	36.16	0.0010065	23.733	151.47	2424.2	151.48	2566.6	0.52082	8.329	0.070217	702.99	10.192	0.62502	0.019319
0.08	41.51	0.0010085	18.099	173.83	2431.4	173.84	2576.2	0.59249	8.2273	0.06935	634.89	10.353	0.63268	0.019711
0.1	45.81	0.0010103	14.67	191.8	2437.2	191.81	2583.9	0.6492	8.1488	0.068643	587.64	10.486	0.63838	0.020037
0.12	49.42	0.0010119	12.358	206.9	2442	206.91	2590.3	0.69628	8.0849	0.068041	552.21	10.598	0.64286	0.020319
0.14	52.55	0.0010134	10.691	219.98	2446.1	219.99	2595.8	0.73664	8.0311	0.067515	524.27	10.697	0.64651	0.020569
0.16	55.31	0.0010147	9.4306	231.55	2449.8	231.57	2600.6	0.77201	7.9846	0.067044	501.46	10.784	0.64955	0.020794
0.18	57.8	0.001016	8.4431	241.95	2453	241.96	2605	0.80355	7.9437	0.066618	482.33	10.864	0.65215	0.021001
0.2	60.06	0.0010172	7.648	251.4	2456	251.42	2608.9	0.83202	7.9072	0.066228	465.97	10.936	0.6544	0.021192
0.22	62.13	0.0010183	6.9936	260.09	2458.7	260.11	2612.5	0.858	7.8743	0.065868	451.74	11.003	0.65638	0.02137
0.24	64.05	0.0010193	6.4453	268.13	2461.2	268.15	2615.9	0.88191	7.8442	0.065532	439.21	11.066	0.65813	0.021537
0.26	65.84	0.0010203	5.9792	275.62	2463.5	275.64	2619	0.90407	7.8167	0.065218	428.05	11.124	0.65969	0.021694
0.28	67.52	0.0010213	5.5778	282.64	2465.7	282.66	2621.8	0.92472	7.7912	0.064922	418.02	11.179	0.6611	0.021844
0.3	69.1	0.0010222	5.2284	289.24	2467.7	289.27	2624.5	0.94407	7.7675	0.064642	408.94	11.231	0.66238	0.021986
0.32	70.59	0.0010231	4.9215	295.49	2469.6	295.52	2627.1	0.96228	7.7453	0.064376	400.65	11.28	0.66355	0.022121
0.34	72	0.001024	4.6497	301.41	2471.4	301.45	2629.5	0.97948	7.7246	0.064123	393.06	11.326	0.66461	0.022251
0.36	73.35	0.0010248	4.4072	307.05	2473.1	307.09	2631.8	0.99579	7.705	0.063882	386.05	11.371	0.66559	0.022376
0.38	74.63	0.0010256	4.1895	312.43	2474.8	312.47	2634	1.0113	7.6865	0.06365	379.56	11.413	0.6665	0.022497
0.4	75.86	0.0010264	3.993	317.58	2476.3	317.62	2636.1	1.0261	7.669	0.063428	373.53	11.454	0.66734	0.022613
0.42	77.03	0.0010271	3.8146	322.52	2477.8	322.56	2638	1.0402	7.6524	0.063214	367.9	11.493	0.66812	0.022725
0.44	78.17	0.0010279	3.652	327.27	2479.3	327.31	2639.9	1.0537	7.6365	0.063008	362.62	11.531	0.66885	0.022833
0.46	79.25	0.0010286	3.5031	331.83	2480.6	331.88	2641.8	1.0667	7.6214	0.062809	357.66	11.567	0.66953	0.022938
0.48	80.3	0.0010293	3.3663	336.24	2481.9	336.29	2643.5	1.0792	7.6069	0.062617	352.99	11.603	0.67017	0.023041
0.5	81.32	0.0010299	3.24	340.49	2483.2	340.54	2645.2	1.0912	7.593	0.062431	348.58	11.636	0.67077	0.02314
0.52	82.3	0.0010306	3.1232	344.6	2484.4	344.66	2646.8	1.1028	7.5797	0.062251	344.41	11.669	0.67133	0.023237
0.54	83.25	0.0010312	3.0148	348.59	2485.6	348.64	2648.4	1.114	7.5669	0.062075	340.45	11.701	0.67186	0.023331
0.56	84.17	0.0010319	2.9139	352.45	2486.8	352.51	2649.9	1.1248	7.5545	0.061905	336.68	11.732	0.67237	0.023423
0.58	85.06	0.0010325	2.8198	356.2	2487.9	356.26	2651.4	1.1353	7.5426	0.06174	333.1	11.762	0.67284	0.023513
0.6	85.93	0.0010331	2.7317	359.84	2489	359.91	2652.9	1.1454	7.5311	0.061578	329.68	11.791	0.67329	0.023601
0.62	86.77	0.0010337	2.6492	363.39	2490	363.45	2654.2	1.1553	7.52	0.061421	326.41	11.82	0.67372	0.023686
0.64	87.59	0.0010342	2.5716	366.84	2491	366.91	2655.6	1.1649	7.5093	0.061268	323.28	11.848	0.67412	0.02377
0.66	88.39	0.0010348	2.4986	370.2	2492	370.27	2656.9	1.1742	7.4989	0.061118	320.28	11.875	0.67451	0.023853
0.68	89.17	0.0010354	2.4298	373.48	2493	373.55	2658.2	1.1833	7.4888	0.060972	317.41	11.901	0.67487	0.023933
0.7	89.93	0.0010359	2.3648	376.68	2493.9	376.75	2659.4	1.1921	7.479	0.060829	314.65	11.927	0.67522	0.024012
0.72	90.67	0.0010364	2.3033	379.8	2494.8	379.88	2660.6	1.2007	7.4695	0.060689	311.99	11.952	0.67555	0.02409
0.74	91.4	0.001037	2.245	382.86	2495.7	382.94	2661.8	1.2091	7.4602	0.060552	309.43	11.977	0.67587	0.024166
0.76	92.11	0.0010375	2.1897	385.84	2496.5	385.92	2663	1.2172	7.4512	0.060418	306.96	12.001	0.67617	0.024241
0.78	92.81	0.001038	2.1371	388.77	2497.4	388.85	2664.1	1.2252	7.4425	0.060287	304.58	12.024	0.67646	0.024315

P bar	T C	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
0.8	93.49	0.0010385	2.0871	391.63	2498.2	391.71	2665.2	1.233	7.4339	0.060158	302.29	12.047	0.67674	0.024387
0.82	94.15	0.001039	2.0394	394.43	2499	394.51	2666.3	1.2407	7.4256	0.060031	300.07	12.07	0.67701	0.024458
0.84	94.8	0.0010395	1.994	397.18	2499.8	397.26	2667.3	1.2482	7.4175	0.059907	297.92	12.092	0.67726	0.024528
0.86	95.44	0.00104	1.9506	399.87	2500.6	399.96	2668.3	1.2555	7.4096	0.059785	295.84	12.114	0.67751	0.024597
0.88	96.07	0.0010404	1.9091	402.51	2501.3	402.6	2669.3	1.2626	7.4018	0.059665	293.82	12.135	0.67774	0.024665
0.9	96.69	0.0010409	1.8694	405.1	2502.1	405.2	2670.3	1.2696	7.3943	0.059548	291.87	12.156	0.67797	0.024732
0.92	97.29	0.0010414	1.8313	407.65	2502.8	407.75	2671.3	1.2765	7.3869	0.059432	289.97	12.177	0.67818	0.024798
0.94	97.89	0.0010418	1.7949	410.15	2503.5	410.25	2672.2	1.2833	7.3796	0.059318	288.13	12.197	0.67839	0.024863
0.96	98.47	0.0010423	1.7599	412.61	2504.2	412.71	2673.1	1.2899	7.3726	0.059206	286.34	12.217	0.67859	0.024927
0.98	99.04	0.0010427	1.7262	415.02	2504.9	415.13	2674.1	1.2964	7.3656	0.059096	284.6	12.237	0.67878	0.02499
1	99.61	0.0010432	1.6939	417.4	2505.6	417.5	2674.9	1.3028	7.3588	0.058988	282.91	12.256	0.67897	0.025053
1.1	102.29	0.0010453	1.5495	428.72	2508.7	428.84	2679.2	1.333	7.3269	0.058469	275.1	12.348	0.67979	0.025353
1.2	104.78	0.0010473	1.4284	439.23	2511.7	439.36	2683.1	1.3609	7.2977	0.057985	268.19	12.433	0.68048	0.025636
1.3	107.11	0.0010492	1.3253	449.05	2514.4	449.19	2686.6	1.3868	7.2709	0.05753	262.02	12.513	0.68106	0.025905
1.4	109.29	0.001051	1.2366	458.27	2516.9	458.42	2690	1.411	7.2461	0.057102	256.46	12.588	0.68154	0.026161
1.5	111.35	0.0010527	1.1593	466.97	2519.2	467.13	2693.1	1.4337	7.223	0.056695	251.41	12.658	0.68195	0.026405
1.6	113.3	0.0010544	1.0914	475.21	2521.4	475.38	2696	1.4551	7.2014	0.056309	246.79	12.725	0.6823	0.026639
1.7	115.15	0.001056	1.0312	483.04	2523.5	483.22	2698.8	1.4753	7.1812	0.055941	242.55	12.789	0.68259	0.026864
1.8	116.91	0.0010576	0.97747	490.51	2525.5	490.7	2701.4	1.4945	7.1621	0.055589	238.64	12.85	0.68284	0.027081
1.9	118.6	0.0010591	0.92924	497.65	2527.3	497.85	2703.9	1.5127	7.144	0.055251	235	12.908	0.68304	0.02729
2	120.21	0.0010605	0.88568	504.49	2529.1	504.7	2706.2	1.5302	7.1269	0.054926	231.62	12.963	0.68321	0.027493
2.1	121.76	0.0010619	0.84614	511.07	2530.8	511.29	2708.5	1.5469	7.1106	0.054613	228.45	13.017	0.68335	0.027689
2.2	123.25	0.0010633	0.81007	517.39	2532.4	517.63	2710.6	1.5628	7.0951	0.054311	225.48	13.068	0.68346	0.02788
2.3	124.69	0.0010646	0.77704	523.49	2533.9	523.74	2712.7	1.5782	7.0803	0.054019	222.69	13.118	0.68354	0.028065
2.4	126.07	0.0010659	0.74668	529.38	2535.4	529.64	2714.6	1.593	7.0661	0.053737	220.05	13.166	0.68361	0.028246
2.5	127.41	0.0010672	0.71866	535.08	2536.8	535.34	2716.5	1.6072	7.0524	0.053463	217.56	13.212	0.68366	0.028421
2.6	128.71	0.0010685	0.69273	540.6	2538.2	540.87	2718.3	1.621	7.0394	0.053197	215.2	13.257	0.68369	0.028593
2.7	129.97	0.0010697	0.66865	545.95	2539.5	546.24	2720	1.6343	7.0268	0.052939	212.96	13.3	0.6837	0.02876
2.8	131.19	0.0010709	0.64624	551.14	2540.8	551.44	2721.7	1.6471	7.0146	0.052688	210.82	13.342	0.6837	0.028924
2.9	132.37	0.001072	0.62533	556.19	2542	556.5	2723.3	1.6596	7.0029	0.052444	208.79	13.383	0.68368	0.029084
3	133.52	0.0010732	0.60576	561.1	2543.2	561.43	2724.9	1.6717	6.9916	0.052205	206.85	13.423	0.68366	0.02924
3.2	135.74	0.0010754	0.57017	570.55	2545.4	570.9	2727.8	1.6949	6.9701	0.051746	203.21	13.499	0.68358	0.029544
3.4	137.84	0.0010775	0.53864	579.54	2547.5	579.91	2730.6	1.7168	6.9498	0.051307	199.86	13.572	0.68346	0.029837
3.6	139.85	0.0010796	0.5105	588.13	2549.5	588.52	2733.2	1.7377	6.9307	0.050887	196.77	13.641	0.68331	0.030119
3.8	141.77	0.0010816	0.48522	596.34	2551.3	596.75	2735.7	1.7575	6.9126	0.050485	193.9	13.708	0.68314	0.030392
4	143.61	0.0010836	0.46238	604.22	2553.1	604.65	2738.1	1.7765	6.8955	0.050097	191.22	13.771	0.68294	0.030656
4.2	145.38	0.0010854	0.44165	611.8	2554.8	612.25	2740.3	1.7946	6.8791	0.049724	188.72	13.832	0.68273	0.030913
4.4	147.08	0.0010873	0.42274	619.1	2556.4	619.58	2742.4	1.812	6.8636	0.049363	186.37	13.891	0.6825	0.031162
4.6	148.72	0.0010891	0.40542	626.14	2557.9	626.64	2744.4	1.8287	6.8487	0.049015	184.16	13.948	0.68225	0.031404

P bar	T C	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
4.8	150.3	0.0010908	0.3895	632.95	2559.3	633.47	2746.3	1.8448	6.8344	0.048677	182.07	14.002	0.68199	0.03164
5	151.83	0.0010925	0.37481	639.54	2560.7	640.09	2748.1	1.8604	6.8207	0.04835	180.09	14.055	0.68172	0.03187
5.2	153.31	0.0010942	0.3612	645.93	2562	646.5	2749.9	1.8754	6.8075	0.048032	178.22	14.106	0.68144	0.032095
5.4	154.75	0.0010959	0.34858	652.13	2563.3	652.72	2751.5	1.8899	6.7948	0.047724	176.44	14.156	0.68115	0.032315
5.6	156.15	0.0010975	0.33682	658.15	2564.5	658.77	2753.1	1.904	6.7825	0.047423	174.75	14.204	0.68086	0.03253
5.8	157.51	0.0010991	0.32585	664.01	2565.7	664.65	2754.7	1.9176	6.7707	0.04713	173.13	14.251	0.68055	0.03274
6	158.83	0.0011006	0.31558	669.72	2566.8	670.38	2756.1	1.9308	6.7592	0.046845	171.59	14.296	0.68024	0.032946
6.2	160.11	0.0011021	0.30596	675.28	2567.9	675.96	2757.6	1.9437	6.7482	0.046566	170.11	14.341	0.67993	0.033148
6.4	161.37	0.0011036	0.29691	680.7	2568.9	681.41	2758.9	1.9562	6.7374	0.046294	168.7	14.384	0.67961	0.033347
6.6	162.59	0.0011051	0.2884	686	2569.9	686.73	2760.3	1.9684	6.727	0.046029	167.34	14.426	0.67928	0.033541
6.8	163.78	0.0011065	0.28036	691.17	2570.9	691.92	2761.5	1.9802	6.7169	0.045769	166.03	14.467	0.67895	0.033732
7	164.95	0.001108	0.27277	696.23	2571.8	697	2762.8	1.9918	6.7071	0.045514	164.78	14.507	0.67862	0.03392
7.2	166.09	0.0011094	0.26559	701.17	2572.7	701.97	2763.9	2.0031	6.6975	0.045265	163.57	14.546	0.67828	0.034105
7.4	167.2	0.0011107	0.25879	706.02	2573.6	706.84	2765.1	2.0141	6.6882	0.045021	162.41	14.585	0.67795	0.034287
7.6	168.29	0.0011121	0.25233	710.76	2574.4	711.61	2766.2	2.0248	6.6791	0.044782	161.28	14.622	0.6776	0.034466
7.8	169.36	0.0011135	0.24618	715.41	2575.2	716.28	2767.3	2.0354	6.6703	0.044547	160.2	14.659	0.67726	0.034642
8	170.41	0.0011148	0.24034	719.97	2576	720.86	2768.3	2.0457	6.6616	0.044317	159.15	14.695	0.67691	0.034815
8.2	171.43	0.0011161	0.23477	724.45	2576.8	725.36	2769.3	2.0557	6.6532	0.044091	158.13	14.731	0.67657	0.034986
8.4	172.44	0.0011174	0.22946	728.84	2577.5	729.78	2770.3	2.0656	6.6449	0.043868	157.15	14.765	0.67622	0.035155
8.6	173.43	0.0011187	0.22438	733.15	2578.3	734.11	2771.2	2.0753	6.6369	0.04365	156.19	14.799	0.67587	0.035321
8.8	174.4	0.0011199	0.21953	737.39	2579	738.37	2772.1	2.0847	6.629	0.043435	155.27	14.833	0.67551	0.035485
9	175.35	0.0011212	0.21489	741.55	2579.6	742.56	2773	2.094	6.6213	0.043224	154.37	14.865	0.67516	0.035647
9.2	176.29	0.0011224	0.21044	745.65	2580.3	746.68	2773.9	2.1032	6.6137	0.043017	153.5	14.898	0.6748	0.035807
9.4	177.21	0.0011236	0.20617	749.68	2580.9	750.73	2774.7	2.1121	6.6063	0.042812	152.65	14.929	0.67445	0.035965
9.6	178.11	0.0011248	0.20208	753.64	2581.6	754.72	2775.5	2.1209	6.5991	0.042611	151.83	14.961	0.67409	0.036121
9.8	179	0.001126	0.19814	757.54	2582.2	758.65	2776.3	2.1296	6.592	0.042413	151.02	14.991	0.67373	0.036275
10	179.88	0.0011272	0.19436	761.39	2582.7	762.52	2777.1	2.1381	6.585	0.042217	150.24	15.021	0.67337	0.036427
10.5	182.01	0.0011301	0.18552	770.75	2584.1	771.94	2778.9	2.1587	6.5681	0.041741	148.38	15.095	0.67247	0.036801
11	184.06	0.001133	0.17745	779.78	2585.5	781.03	2780.6	2.1785	6.552	0.041282	146.62	15.165	0.67157	0.037164
11.5	186.04	0.0011358	0.17006	788.51	2586.7	789.82	2782.2	2.1976	6.5365	0.040837	144.97	15.233	0.67066	0.037518
12	187.96	0.0011385	0.16326	796.96	2587.8	798.33	2783.7	2.2159	6.5217	0.040406	143.41	15.299	0.66976	0.037863
12.5	189.81	0.0011412	0.15699	805.16	2588.9	806.58	2785.1	2.2337	6.5074	0.039988	141.93	15.363	0.66885	0.038201
13	191.6	0.0011438	0.15119	813.11	2589.9	814.6	2786.5	2.2508	6.4936	0.039583	140.53	15.425	0.66794	0.038531
14	195.04	0.0011489	0.14078	828.36	2591.8	829.97	2788.8	2.2835	6.4675	0.038804	137.92	15.544	0.66612	0.03917
15	198.29	0.0011539	0.13171	842.83	2593.4	844.56	2791	2.3143	6.443	0.038065	135.54	15.656	0.66431	0.039785
16	201.37	0.0011587	0.12374	856.6	2594.8	858.46	2792.8	2.3435	6.4199	0.037361	133.36	15.762	0.6625	0.040378
18	207.11	0.0011679	0.11037	882.37	2597.2	884.47	2795.9	2.3975	6.3775	0.036045	129.47	15.961	0.6589	0.041507
20	212.38	0.0011767	0.099585	906.14	2599.1	908.5	2798.3	2.4468	6.339	0.034832	126.1	16.144	0.65532	0.042572
22	217.25	0.0011852	0.090698	928.27	2600.6	930.87	2800.1	2.4921	6.3038	0.033705	123.13	16.314	0.65176	0.043585

P bar	T C	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
24	221.79	0.0011934	0.083244	949	2601.6	951.87	2801.4	2.5343	6.2712	0.032651	120.49	16.474	0.64824	0.044555
26	226.05	0.0012014	0.076899	968.55	2602.4	971.67	2802.3	2.5736	6.2409	0.03166	118.1	16.624	0.64473	0.045487
28	230.06	0.0012091	0.071429	987.07	2602.9	990.46	2802.9	2.6106	6.2124	0.030723	115.93	16.767	0.64126	0.046388
30	233.85	0.0012167	0.066664	1004.7	2603.2	1008.3	2803.2	2.6455	6.1856	0.029835	113.94	16.903	0.6378	0.047263
32	237.46	0.0012241	0.062475	1021.5	2603.2	1025.4	2803.1	2.6787	6.1602	0.02899	112.11	17.033	0.63436	0.048115
34	240.9	0.0012314	0.058761	1037.7	2603.1	1041.8	2802.9	2.7102	6.136	0.028183	110.41	17.158	0.63094	0.048947
36	244.18	0.0012385	0.055446	1053.1	2602.8	1057.6	2802.4	2.7403	6.1129	0.027411	108.83	17.278	0.62754	0.049763
38	247.33	0.0012456	0.052467	1068.1	2602.3	1072.8	2801.7	2.7691	6.0908	0.026671	107.35	17.395	0.62416	0.050566
40	250.35	0.0012526	0.049776	1082.5	2601.7	1087.5	2800.8	2.7968	6.0696	0.02596	105.95	17.508	0.62079	0.051357
42	253.26	0.0012594	0.047332	1096.4	2601	1101.7	2799.8	2.8234	6.0491	0.025275	104.64	17.618	0.61744	0.052138
44	256.07	0.0012663	0.045102	1109.9	2600.1	1115.5	2798.6	2.849	6.0293	0.024614	103.39	17.725	0.6141	0.052912
46	258.78	0.001273	0.043059	1123	2599.2	1128.9	2797.3	2.8738	6.0102	0.023976	102.21	17.829	0.61077	0.053679
48	261.4	0.0012797	0.04118	1135.8	2598.1	1141.9	2795.8	2.8978	5.9917	0.023359	101.08	17.932	0.60746	0.054443
50	263.94	0.0012864	0.039446	1148.2	2597	1154.6	2794.2	2.921	5.9737	0.022761	100.01	18.032	0.60415	0.055203
55	269.97	0.0013029	0.035642	1177.9	2593.7	1185.1	2789.7	2.9762	5.9307	0.021345	97.511	18.275	0.59596	0.0571
60	275.58	0.0013193	0.032448	1206	2589.9	1213.9	2784.6	3.0278	5.8901	0.020026	95.248	18.51	0.58784	0.059006
65	280.86	0.0013356	0.029727	1232.7	2585.7	1241.4	2778.9	3.0764	5.8516	0.018792	93.171	18.737	0.57982	0.060939
70	285.83	0.0013519	0.027378	1258.2	2581	1267.7	2772.6	3.1224	5.8148	0.017633	91.249	18.96	0.57188	0.062915
75	290.54	0.0013682	0.02533	1282.7	2575.9	1292.9	2765.9	3.1662	5.7793	0.01654	89.454	19.179	0.56405	0.064949
80	295.01	0.0013847	0.023526	1306.2	2570.5	1317.3	2758.7	3.2081	5.745	0.015507	87.766	19.397	0.55634	0.067056
85	299.27	0.0014013	0.021923	1329	2564.7	1340.9	2751	3.2483	5.7117	0.014527	86.169	19.613	0.54875	0.069253
90	303.34	0.0014181	0.02049	1351.1	2558.5	1363.9	2742.9	3.287	5.6791	0.013596	84.648	19.83	0.54129	0.071555
95	307.25	0.0014352	0.019199	1372.6	2552	1386.2	2734.4	3.3244	5.6473	0.012709	83.194	20.047	0.53398	0.073979
100	311	0.0014526	0.01803	1393.5	2545.2	1408.1	2725.5	3.3606	5.616	0.011865	81.795	20.267	0.52683	0.076543
102	312.46	0.0014596	0.017592	1401.8	2542.4	1416.7	2721.8	3.3749	5.6035	0.011538	81.25	20.355	0.52401	0.077612
104	313.89	0.0014668	0.01717	1410	2539.5	1425.2	2718	3.3889	5.5912	0.011217	80.712	20.444	0.52122	0.078707
106	315.31	0.0014739	0.016763	1418.1	2536.5	1433.7	2714.2	3.4028	5.5789	0.010901	80.18	20.534	0.51846	0.079831
108	316.7	0.0014812	0.01637	1426.1	2533.5	1442.1	2710.3	3.4166	5.5667	0.010592	79.655	20.624	0.51572	0.080984
110	318.08	0.0014885	0.01599	1434.1	2530.5	1450.4	2706.3	3.4303	5.5545	0.010287	79.136	20.715	0.51301	0.082168
112	319.43	0.0014959	0.015622	1442	2527.3	1458.7	2702.3	3.4438	5.5423	0.0099887	78.623	20.807	0.51032	0.083384
114	320.77	0.0015034	0.015266	1449.9	2524.2	1467	2698.2	3.4572	5.5302	0.0096952	78.114	20.9	0.50766	0.084634
116	322.09	0.0015109	0.014922	1457.7	2520.9	1475.2	2694	3.4705	5.5181	0.0094067	77.611	20.993	0.50503	0.08592
118	323.39	0.0015186	0.014588	1465.4	2517.6	1483.3	2689.8	3.4836	5.506	0.0091233	77.112	21.088	0.50243	0.087243
120	324.68	0.0015263	0.014264	1473.1	2514.3	1491.5	2685.4	3.4967	5.4939	0.0088447	76.617	21.183	0.49985	0.088605
122	325.94	0.0015341	0.01395	1480.8	2510.9	1499.5	2681	3.5097	5.4819	0.0085709	76.127	21.28	0.49729	0.090009
124	327.19	0.0015421	0.013645	1488.5	2507.4	1507.6	2676.6	3.5226	5.4698	0.0083018	75.639	21.377	0.49477	0.091455
126	328.43	0.0015501	0.013349	1496	2503.8	1515.6	2672	3.5354	5.4577	0.0080373	75.155	21.476	0.49226	0.092947
128	329.65	0.0015582	0.013061	1503.6	2500.2	1523.6	2667.4	3.5481	5.4457	0.0077773	74.674	21.577	0.48979	0.094485
130	330.85	0.0015665	0.01278	1511.1	2496.5	1531.5	2662.7	3.5608	5.4336	0.0075216	74.196	21.678	0.48733	0.096074

P bar	T C	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
132	332.04	0.0015749	0.012508	1518.6	2492.8	1539.4	2657.9	3.5734	5.4215	0.0072703	73.72	21.782	0.4849	0.097715
134	333.22	0.0015834	0.012242	1526.1	2489	1547.3	2653	3.5859	5.4093	0.0070232	73.247	21.886	0.4825	0.09941
136	334.38	0.001592	0.011983	1533.6	2485.1	1555.2	2648	3.5984	5.3972	0.0067803	72.775	21.993	0.48012	0.10116
138	335.53	0.0016008	0.011731	1541	2481.1	1563.1	2643	3.6108	5.385	0.0065415	72.304	22.101	0.47775	0.10298
140	336.67	0.0016097	0.011485	1548.4	2477.1	1571	2637.9	3.6232	5.3727	0.0063068	71.835	22.211	0.47541	0.10485
142	337.79	0.0016188	0.011245	1555.8	2472.9	1578.8	2632.6	3.6355	5.3604	0.006076	71.367	22.323	0.47309	0.1068
144	338.9	0.0016281	0.011011	1563.2	2468.7	1586.7	2627.3	3.6478	5.3481	0.0058492	70.9	22.437	0.47079	0.10881
146	340	0.0016375	0.010781	1570.6	2464.5	1594.5	2621.9	3.6601	5.3356	0.0056262	70.433	22.554	0.46851	0.11091
148	341.08	0.0016471	0.010557	1578	2460.1	1602.3	2616.3	3.6723	5.3231	0.0054071	69.966	22.672	0.46625	0.11307
150	342.16	0.001657	0.010338	1585.3	2455.6	1610.2	2610.7	3.6846	5.3106	0.0051917	69.499	22.794	0.46401	0.11533
152	343.22	0.001667	0.010124	1592.7	2451.1	1618.1	2605	3.6968	5.2979	0.0049801	69.031	22.917	0.46178	0.11767
154	344.27	0.0016772	0.009914	1600.1	2446.4	1625.9	2599.1	3.709	5.2852	0.0047721	68.562	23.044	0.45957	0.12011
156	345.31	0.0016877	0.0097083	1607.5	2441.7	1633.8	2593.1	3.7212	5.2723	0.0045678	68.092	23.174	0.45737	0.12264
158	346.34	0.0016984	0.0095067	1614.9	2436.8	1641.7	2587	3.7335	5.2594	0.0043671	67.62	23.306	0.4552	0.12528
160	347.35	0.0017094	0.0093088	1622.3	2431.8	1649.7	2580.8	3.7457	5.2463	0.00417	67.146	23.442	0.45303	0.12804
162	348.36	0.0017207	0.0091147	1629.8	2426.8	1657.7	2574.4	3.758	5.2331	0.0039765	66.669	23.582	0.45088	0.13092
164	349.36	0.0017323	0.008924	1637.3	2421.6	1665.7	2567.9	3.7704	5.2197	0.0037865	66.189	23.725	0.44874	0.13393
166	350.35	0.0017443	0.0087366	1644.8	2416.2	1673.7	2561.3	3.7827	5.2062	0.0036	65.705	23.873	0.44662	0.13707
168	351.32	0.0017566	0.0085523	1652.3	2410.8	1681.9	2554.5	3.7952	5.1925	0.003417	65.217	24.025	0.44451	0.14037
170	352.29	0.0017693	0.0083709	1659.9	2405.2	1690	2547.5	3.8077	5.1787	0.0032375	64.724	24.181	0.44242	0.14384
172	353.25	0.0017824	0.0081923	1667.6	2399.4	1698.3	2540.4	3.8203	5.1646	0.0030614	64.226	24.343	0.44034	0.14748
174	354.2	0.0017959	0.0080163	1675.3	2393.5	1706.6	2533	3.833	5.1504	0.0028889	63.721	24.51	0.43828	0.15131
176	355.14	0.00181	0.0078426	1683.1	2387.5	1715	2525.5	3.8458	5.1359	0.0027197	63.21	24.682	0.43623	0.15535
178	356.07	0.0018246	0.0076712	1691	2381.2	1723.5	2517.8	3.8587	5.1211	0.0025541	62.69	24.861	0.43421	0.15963
180	356.99	0.0018398	0.0075017	1699	2374.8	1732.1	2509.8	3.8718	5.1061	0.0023919	62.162	25.047	0.4322	0.16416
182	357.91	0.0018556	0.0073341	1707	2368.2	1740.8	2501.6	3.8851	5.0907	0.0022332	61.624	25.241	0.43022	0.16898
184	358.81	0.0018722	0.0071681	1715.2	2361.3	1749.7	2493.2	3.8985	5.075	0.0020781	61.076	25.442	0.42827	0.17411
186	359.71	0.0018895	0.0070034	1723.5	2354.2	1758.7	2484.4	3.9121	5.059	0.0019264	60.516	25.653	0.42635	0.17961
188	360.59	0.0019077	0.0068399	1732	2346.8	1767.8	2475.4	3.926	5.0425	0.0017784	59.944	25.873	0.42447	0.18551
190	361.47	0.0019268	0.0066773	1740.5	2339.1	1777.2	2466	3.9401	5.0256	0.0016339	59.359	26.104	0.42265	0.19188
192	362.34	0.0019469	0.0065153	1749.3	2331.1	1786.7	2456.2	3.9545	5.0081	0.0014932	58.758	26.348	0.42091	0.19879
194	363.21	0.0019681	0.0063535	1758.2	2322.8	1796.4	2446.1	3.9692	4.9901	0.0013561	58.142	26.606	0.41927	0.20634
196	364.06	0.0019906	0.0061915	1767.4	2314	1806.4	2435.4	3.9843	4.9713	0.0012229	57.508	26.879	0.41778	0.21463
198	364.91	0.0020145	0.006029	1776.8	2304.8	1816.7	2424.2	3.9997	4.9518	0.0010936	56.855	27.171	0.41649	0.22383
200	365.75	0.00204	0.0058652	1786.4	2295	1827.2	2412.3	4.0156	4.9314	0.00096839	56.181	27.484	0.41551	0.23414
202	366.58	0.0020674	0.0056996	1796.4	2284.6	1838.1	2399.8	4.032	4.91	0.00084735	55.481	27.822	0.41497	0.24583
204	367.4	0.0020969	0.0055313	1806.7	2273.5	1849.5	2386.3	4.0491	4.8872	0.0007307	54.752	28.19	0.41509	0.25931
206	368.22	0.0021291	0.005359	1817.5	2261.5	1861.4	2371.9	4.067	4.8629	0.00061866	53.984	28.594	0.41618	0.27514
208	369.03	0.0021649	0.0051814	1828.9	2248.3	1874	2356.1	4.086	4.8367	0.00051152	53.165	29.045	0.41873	0.29418

P bar	T C	v_f m^3/kg	v_g m^3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg K	s_g kJ/kg K	σ N/m	μ_f mPa s	μ_g mPa s	k_f W/m K	k_g W/m K
210	369.83	0.0022055	0.0049961	1841.2	2233.7	1887.6	2338.6	4.1064	4.8079	0.00040966	52.275	29.557	0.42356	0.31786
212	370.62	0.0022531	0.0048	1854.8	2217.1	1902.6	2318.9	4.1291	4.7758	0.00031358	51.282	30.15	0.43214	0.34859
214	371.4	0.0023115	0.004588	1870.3	2197.9	1919.7	2296.1	4.155	4.739	0.00022397	50.129	30.861	0.44732	0.3911
216	372.18	0.002388	0.0043508	1888.9	2174.7	1940.4	2268.6	4.1864	4.695	0.00014193	48.72	31.757	0.47586	0.4561
218	372.95	0.0024983	0.004068	1912.9	2144.2	1967.4	2232.9	4.2274	4.6383	6.94E-05	47.889	33.535	0.54018	0.57738
220	373.71	0.0027044	0.0036475	1951.8	2092.8	2011.3	2173.1	4.2945	4.5446	1.16E-05	46.846	37.493	0.87031	1.042

Superheated steam / Subcooled water: Pressure 0.02 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.02	42.022	0.15109	4.1955	1306	0.58
17.495	0.0010014	73.426	73.428	0.26056	4.1863	1066.3	0.5939
17.495	66.987	2398.9	2532.9	8.7226	1.903	9.6588	0.01807
20	67.57	2402.5	2537.6	8.7389	1.8957	9.7279	0.018217
30	69.891	2416.7	2556.5	8.8022	1.8838	10.014	0.018824
40	72.208	2430.9	2575.3	8.8633	1.8811	10.316	0.019468
50	74.524	2445.1	2594.1	8.9225	1.881	10.631	0.020144
60	76.837	2459.3	2613	8.9798	1.8821	10.957	0.020849
70	79.15	2473.5	2631.8	9.0355	1.884	11.293	0.021581
80	81.461	2487.7	2650.6	9.0896	1.8865	11.638	0.022337
90	83.772	2502	2669.5	9.1424	1.8895	11.991	0.023116
100	86.083	2516.3	2688.4	9.1937	1.893	12.351	0.023917
110	88.393	2530.6	2707.4	9.2438	1.8967	12.717	0.024738
120	90.702	2545	2726.4	9.2928	1.9008	13.089	0.025579
130	93.012	2559.4	2745.4	9.3406	1.9052	13.465	0.026437
140	95.321	2573.8	2764.5	9.3873	1.9098	13.846	0.027313
150	97.63	2588.3	2783.6	9.433	1.9145	14.232	0.028206
160	99.939	2602.9	2802.8	9.4778	1.9195	14.621	0.029115
170	102.25	2617.5	2822	9.5217	1.9246	15.013	0.03004
180	104.56	2632.1	2841.3	9.5647	1.9298	15.409	0.030979
190	106.86	2646.9	2860.6	9.6069	1.9352	15.807	0.031933
200	109.17	2661.6	2880	9.6483	1.9407	16.208	0.032901
210	111.48	2676.4	2899.4	9.6889	1.9463	16.61	0.033882
220	113.79	2691.3	2918.9	9.7288	1.9519	17.015	0.034876
230	116.1	2706.2	2938.4	9.7681	1.9577	17.422	0.035884
240	118.41	2721.2	2958	9.8067	1.9635	17.83	0.036903
250	120.71	2736.3	2977.7	9.8446	1.9694	18.239	0.037935
260	123.02	2751.4	2997.4	9.882	1.9754	18.65	0.038978
270	125.33	2766.6	3017.2	9.9187	1.9814	19.062	0.040033
280	127.64	2781.8	3037.1	9.9549	1.9875	19.474	0.041099
290	129.95	2797.1	3057	9.9906	1.9936	19.888	0.042175
300	132.25	2812.4	3076.9	10.026	1.9998	20.302	0.043263
320	136.87	2843.3	3117.1	10.095	2.0122	21.131	0.045468
340	141.48	2874.5	3157.4	10.161	2.0249	21.962	0.047713
360	146.1	2905.8	3198	10.227	2.0377	22.793	0.049996
380	150.72	2937.5	3238.9	10.29	2.0506	23.624	0.052315
400	155.33	2969.4	3280.1	10.352	2.0637	24.454	0.054669
420	159.95	3001.6	3321.5	10.413	2.0769	25.282	0.057056
440	164.56	3034	3363.1	10.472	2.0902	26.109	0.059475
460	169.18	3066.7	3405.1	10.53	2.1037	26.933	0.061925
480	173.79	3099.7	3447.3	10.587	2.1172	27.755	0.064404
500	178.41	3133	3489.8	10.643	2.1309	28.574	0.066912
520	183.02	3166.5	3532.5	10.697	2.1447	29.389	0.069446
540	187.64	3200.3	3575.6	10.751	2.1586	30.201	0.072007
560	192.25	3234.4	3618.9	10.803	2.1725	31.009	0.074593
580	196.87	3268.7	3662.5	10.855	2.1865	31.814	0.077204
600	201.49	3303.4	3706.3	10.906	2.2006	32.614	0.079838
620	206.1	3338.3	3750.5	10.956	2.2148	33.41	0.082494
640	210.72	3373.5	3794.9	11.005	2.229	34.202	0.085172
660	215.33	3409	3839.6	11.054	2.2432	34.989	0.087871
680	219.95	3444.8	3884.7	11.101	2.2574	35.772	0.09059
700	224.56	3480.8	3929.9	11.148	2.2716	36.551	0.093328
720	229.18	3517.2	3975.5	11.195	2.2858	37.324	0.096085
740	233.79	3553.8	4021.4	11.24	2.3	38.093	0.09886
760	238.41	3590.7	4067.5	11.286	2.3142	38.858	0.10165
780	243.02	3627.9	4113.9	11.33	2.3283	39.617	0.10446
800	247.64	3665.4	4160.7	11.374	2.3424	40.372	0.10729

Superheated steam / Subcooled water: Pressure 0.05 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.02	42.025	0.15109	4.1955	1306	0.58
20	0.0010018	83.912	83.917	0.29648	4.1844	1001.6	0.59842
30	0.0010044	125.73	125.73	0.43675	4.1801	797.36	0.61546
32.874	0.0010053	137.74	137.75	0.4762	4.1797	750.91	0.62002
32.874	28.185	2419.8	2560.7	8.3938	1.9217	10.094	0.019086
40	28.85	2430.1	2574.3	8.4378	1.9048	10.311	0.019541
50	29.781	2444.4	2593.3	8.4975	1.8964	10.627	0.020207
60	30.711	2458.7	2612.3	8.5553	1.8936	10.953	0.020905
70	31.639	2473	2631.2	8.6113	1.893	11.29	0.02163
80	32.566	2487.3	2650.2	8.6656	1.8937	11.635	0.022381
90	33.492	2501.6	2669.1	8.7185	1.8954	11.988	0.023155
100	34.418	2516	2688.1	8.7701	1.8977	12.349	0.023951
110	35.343	2530.3	2707.1	8.8203	1.9007	12.715	0.024769
120	36.269	2544.7	2726.1	8.8693	1.9041	13.087	0.025606
130	37.193	2559.2	2745.1	8.9172	1.908	13.463	0.026462
140	38.118	2573.7	2764.2	8.964	1.9121	13.845	0.027335
150	39.042	2588.2	2783.4	9.0098	1.9165	14.23	0.028226
160	39.967	2602.7	2802.6	9.0546	1.9212	14.62	0.029133
170	40.891	2617.4	2821.8	9.0985	1.9261	15.012	0.030056
180	41.815	2632	2841.1	9.1415	1.9311	15.408	0.030993
190	42.739	2646.7	2860.4	9.1837	1.9364	15.806	0.031946
200	43.662	2661.5	2879.8	9.2251	1.9417	16.207	0.032912
210	44.586	2676.3	2899.3	9.2658	1.9472	16.609	0.033893
220	45.51	2691.2	2918.8	9.3058	1.9527	17.014	0.034886
230	46.433	2706.2	2938.3	9.345	1.9584	17.421	0.035892
240	47.357	2721.2	2957.9	9.3836	1.9642	17.829	0.036911
250	48.28	2736.2	2977.6	9.4216	1.97	18.239	0.037942
260	49.204	2751.3	2997.3	9.4589	1.9759	18.649	0.038985
270	50.127	2766.5	3017.1	9.4957	1.9819	19.061	0.040039
280	51.051	2781.7	3037	9.5319	1.9879	19.474	0.041104
290	51.974	2797	3056.9	9.5676	1.994	19.887	0.042181
300	52.897	2812.4	3076.9	9.6027	2.0001	20.302	0.043268
320	54.744	2843.3	3117	9.6716	2.0126	21.131	0.045473
340	56.591	2874.4	3157.4	9.7385	2.0252	21.962	0.047717
360	58.437	2905.8	3198	9.8037	2.0379	22.793	0.05
380	60.284	2937.5	3238.9	9.8673	2.0508	23.624	0.052319
400	62.13	2969.4	3280	9.9293	2.0639	24.454	0.054672
420	63.977	3001.6	3321.4	9.99	2.077	25.282	0.057059
440	65.823	3034	3363.1	10.049	2.0904	26.109	0.059478
460	67.669	3066.7	3405	10.107	2.1038	26.933	0.061927
480	69.516	3099.7	3447.3	10.164	2.1173	27.755	0.064406
500	71.362	3132.9	3489.7	10.22	2.131	28.574	0.066914
520	73.208	3166.5	3532.5	10.274	2.1448	29.389	0.069448
540	75.054	3200.3	3575.5	10.328	2.1586	30.201	0.072009
560	76.901	3234.3	3618.8	10.381	2.1726	31.009	0.074595
580	78.747	3268.7	3662.4	10.432	2.1866	31.814	0.077206
600	80.593	3303.3	3706.3	10.483	2.2007	32.614	0.079839
620	82.439	3338.3	3750.5	10.533	2.2149	33.41	0.082496
640	84.285	3373.5	3794.9	10.582	2.229	34.202	0.085174
660	86.132	3409	3839.6	10.631	2.2432	34.989	0.087872
680	87.978	3444.7	3884.6	10.678	2.2575	35.772	0.090591
700	89.824	3480.8	3929.9	10.725	2.2717	36.551	0.09333
720	91.67	3517.2	3975.5	10.772	2.2859	37.324	0.096087
740	93.516	3553.8	4021.4	10.818	2.3001	38.094	0.098862
760	95.362	3590.7	4067.5	10.863	2.3142	38.858	0.10165
780	97.209	3627.9	4113.9	10.907	2.3283	39.618	0.10446
800	99.055	3665.4	4160.6	10.951	2.3424	40.372	0.10729

Superheated steam / Subcooled water: Pressure 0.1 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.02	42.03	0.15109	4.1955	1306	0.58
20	0.0010018	83.911	83.921	0.29648	4.1843	1001.6	0.59842
30	0.0010044	125.73	125.74	0.43675	4.1801	797.35	0.61546
40	0.0010079	167.53	167.54	0.5724	4.1796	652.97	0.63059
45.806	0.0010103	191.8	191.81	0.6492	4.1805	587.64	0.63838
45.806	14.67	2437.2	2583.9	8.1488	1.94	10.486	0.020037
50	14.867	2443.3	2592	8.1741	1.928	10.62	0.020314
60	15.335	2457.8	2611.2	8.2326	1.9143	10.947	0.020998
70	15.801	2472.3	2630.3	8.2891	1.9085	11.284	0.021712
80	16.267	2486.7	2649.3	8.3439	1.9059	11.63	0.022453
90	16.732	2501.1	2668.4	8.3971	1.9052	11.984	0.023219
100	17.196	2515.5	2687.5	8.4489	1.9058	12.344	0.024009
110	17.66	2529.9	2706.5	8.4993	1.9073	12.711	0.02482
120	18.124	2544.4	2725.6	8.5484	1.9097	13.083	0.025651
130	18.587	2558.8	2744.7	8.5964	1.9126	13.46	0.026502
140	19.05	2573.4	2763.9	8.6434	1.9161	13.842	0.027372
150	19.513	2587.9	2783	8.6892	1.9199	14.228	0.028259
160	19.976	2602.5	2802.3	8.7341	1.9241	14.617	0.029162
170	20.438	2617.1	2821.5	8.7781	1.9286	15.01	0.030082
180	20.901	2631.8	2840.8	8.8212	1.9334	15.406	0.031017
190	21.363	2646.6	2860.2	8.8634	1.9383	15.804	0.031967
200	21.826	2661.3	2879.6	8.9049	1.9434	16.205	0.032932
210	22.288	2676.2	2899.1	8.9456	1.9487	16.608	0.03391
220	22.75	2691.1	2918.6	8.9856	1.9541	17.013	0.034902
230	23.212	2706	2938.1	9.0248	1.9596	17.42	0.035907
240	23.674	2721	2957.8	9.0635	1.9653	17.828	0.036924
250	24.136	2736.1	2977.4	9.1015	1.971	18.238	0.037954
260	24.598	2751.2	2997.2	9.1388	1.9768	18.649	0.038996
270	25.06	2766.4	3017	9.1756	1.9827	19.06	0.040049
280	25.522	2781.6	3036.8	9.2118	1.9887	19.473	0.041114
290	25.984	2796.9	3056.8	9.2475	1.9947	19.887	0.042189
300	26.446	2812.3	3076.7	9.2827	2.0008	20.301	0.043276
320	27.369	2843.2	3116.9	9.3515	2.0131	21.131	0.04548
340	28.293	2874.3	3157.3	9.4185	2.0256	21.961	0.047723
360	29.216	2905.7	3197.9	9.4837	2.0383	22.793	0.050005
380	30.14	2937.4	3238.8	9.5473	2.0512	23.624	0.052324
400	31.063	2969.3	3279.9	9.6094	2.0642	24.454	0.054677
420	31.986	3001.5	3321.4	9.67	2.0773	25.282	0.057063
440	32.91	3033.9	3363	9.7293	2.0906	26.109	0.059482
460	33.833	3066.7	3405	9.7873	2.104	26.933	0.061931
480	34.756	3099.6	3447.2	9.8441	2.1175	27.755	0.06441
500	35.68	3132.9	3489.7	9.8998	2.1312	28.574	0.066917
520	36.603	3166.4	3532.5	9.9544	2.1449	29.389	0.069452
540	37.526	3200.2	3575.5	10.008	2.1588	30.201	0.072012
560	38.449	3234.3	3618.8	10.061	2.1727	31.009	0.074598
580	39.372	3268.7	3662.4	10.112	2.1867	31.814	0.077209
600	40.296	3303.3	3706.3	10.163	2.2008	32.614	0.079842
620	41.219	3338.2	3750.4	10.213	2.215	33.41	0.082499
640	42.142	3373.5	3794.9	10.262	2.2291	34.202	0.085176
660	43.065	3408.9	3839.6	10.311	2.2433	34.99	0.087875
680	43.988	3444.7	3884.6	10.358	2.2575	35.773	0.090594
700	44.911	3480.8	3929.9	10.406	2.2718	36.551	0.093332
720	45.834	3517.1	3975.5	10.452	2.286	37.325	0.096089
740	46.758	3553.8	4021.3	10.498	2.3001	38.094	0.098864
760	47.681	3590.7	4067.5	10.543	2.3143	38.858	0.10166
780	48.604	3627.9	4113.9	10.587	2.3284	39.618	0.10447
800	49.527	3665.3	4160.6	10.631	2.3425	40.373	0.10729

Superheated steam / Subcooled water: Pressure 0.2 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.02	42.04	0.15108	4.1955	1306	0.58001
20	0.0010018	83.911	83.931	0.29648	4.1843	1001.6	0.59842
30	0.0010044	125.73	125.75	0.43675	4.18	797.35	0.61547
40	0.0010079	167.52	167.54	0.5724	4.1796	652.97	0.63059
50	0.0010121	209.33	209.35	0.70381	4.1815	546.83	0.64356
60	0.0010171	251.16	251.18	0.83129	4.1851	466.38	0.65435
60.058	0.0010172	251.4	251.42	0.83202	4.1852	465.97	0.6544
60.058	7.648	2456	2608.9	7.9072	1.9649	10.936	0.021192
70	7.8826	2470.7	2628.3	7.9646	1.9421	11.273	0.021879
80	8.1176	2485.3	2647.7	8.0202	1.9314	11.62	0.0226
90	8.3518	2499.9	2667	8.0741	1.9254	11.975	0.023349
100	8.5855	2514.5	2686.2	8.1263	1.9222	12.336	0.024124
110	8.8187	2529.1	2705.4	8.1771	1.9208	12.704	0.024922
120	9.0516	2543.6	2724.6	8.2266	1.9209	13.077	0.025743
130	9.2841	2558.2	2743.9	8.2749	1.9221	13.454	0.026584
140	9.5164	2572.8	2763.1	8.322	1.9241	13.837	0.027445
150	9.7486	2587.4	2782.3	8.368	1.9268	14.223	0.028324
160	9.9805	2602	2801.6	8.4131	1.93	14.613	0.029221
170	10.212	2616.7	2820.9	8.4572	1.9337	15.006	0.030135
180	10.444	2631.4	2840.3	8.5004	1.9378	15.402	0.031065
190	10.676	2646.2	2859.7	8.5427	1.9422	15.801	0.03201
200	10.907	2661	2879.1	8.5843	1.9469	16.202	0.032971
210	11.139	2675.9	2898.6	8.625	1.9518	16.605	0.033945
220	11.37	2690.8	2918.2	8.6651	1.9569	17.01	0.034934
230	11.601	2705.7	2937.8	8.7044	1.9621	17.417	0.035936
240	11.833	2720.8	2957.4	8.7431	1.9675	17.826	0.036951
250	12.064	2735.8	2977.1	8.7811	1.973	18.236	0.037979
260	12.295	2751	2996.9	8.8185	1.9786	18.647	0.039018
270	12.526	2766.2	3016.7	8.8553	1.9844	19.059	0.04007
280	12.757	2781.4	3036.6	8.8916	1.9902	19.472	0.041133
290	12.989	2796.7	3056.5	8.9273	1.9961	19.885	0.042207
300	13.22	2812.1	3076.5	8.9625	2.0021	20.3	0.043292
320	13.682	2843	3116.7	9.0314	2.0142	21.13	0.045494
340	14.144	2874.2	3157.1	9.0983	2.0266	21.961	0.047736
360	14.606	2905.6	3197.7	9.1636	2.0391	22.792	0.050017
380	15.068	2937.3	3238.6	9.2272	2.0519	23.623	0.052334
400	15.53	2969.2	3279.8	9.2893	2.0648	24.453	0.054686
420	15.991	3001.4	3321.2	9.3499	2.0779	25.282	0.057072
440	16.453	3033.8	3362.9	9.4092	2.0911	26.109	0.05949
460	16.915	3066.6	3404.9	9.4672	2.1045	26.933	0.061939
480	17.377	3099.6	3447.1	9.5241	2.1179	27.755	0.064417
500	17.838	3132.8	3489.6	9.5798	2.1316	28.574	0.066924
520	18.3	3166.3	3532.4	9.6344	2.1453	29.389	0.069458
540	18.762	3200.2	3575.4	9.688	2.1591	30.201	0.072019
560	19.224	3234.2	3618.7	9.7406	2.173	31.01	0.074605
580	19.685	3268.6	3662.3	9.7923	2.187	31.814	0.077215
600	20.147	3303.3	3706.2	9.8431	2.2011	32.615	0.079848
620	20.609	3338.2	3750.4	9.8932	2.2152	33.411	0.082504
640	21.07	3373.4	3794.8	9.9424	2.2293	34.203	0.085182
660	21.532	3408.9	3839.5	9.9908	2.2435	34.99	0.087881
680	21.993	3444.7	3884.5	10.039	2.2577	35.773	0.0906
700	22.455	3480.7	3929.8	10.086	2.2719	36.551	0.093338
720	22.917	3517.1	3975.4	10.132	2.2861	37.325	0.096095
740	23.378	3553.7	4021.3	10.178	2.3003	38.094	0.098869
760	23.84	3590.6	4067.4	10.223	2.3144	38.859	0.10166
780	24.301	3627.8	4113.9	10.267	2.3285	39.618	0.10447
800	24.763	3665.3	4160.6	10.311	2.3426	40.373	0.1073

Superheated steam / Subcooled water: Pressure 0.4 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.019	42.059	0.15108	4.1954	1305.9	0.58002
20	0.0010018	83.91	83.95	0.29648	4.1842	1001.6	0.59843
30	0.0010044	125.73	125.77	0.43674	4.18	797.35	0.61547
40	0.0010079	167.52	167.56	0.57239	4.1796	652.97	0.6306
50	0.0010121	209.33	209.37	0.7038	4.1815	546.84	0.64357
60	0.0010171	251.16	251.2	0.83128	4.1851	466.38	0.65436
70	0.0010228	293.03	293.07	0.95513	4.1902	403.88	0.6631
75.857	0.0010264	317.58	317.62	1.0261	4.1939	373.53	0.66734
75.857	3.993	2476.3	2636.1	7.669	2.0007	11.454	0.022613
80	4.0425	2482.6	2644.3	7.6925	1.988	11.6	0.022899
90	4.1615	2497.6	2664.1	7.7477	1.9683	11.957	0.023613
100	4.2799	2512.5	2683.7	7.801	1.9564	12.32	0.024357
110	4.3978	2527.3	2703.2	7.8527	1.9488	12.689	0.025129
120	4.5153	2542.1	2722.7	7.9028	1.944	13.063	0.025927
130	4.6325	2556.8	2742.1	7.9516	1.9414	13.442	0.026748
140	4.7495	2571.5	2761.5	7.9992	1.9404	13.826	0.027591
150	4.8662	2586.3	2780.9	8.0456	1.9407	14.213	0.028455
160	4.9828	2601	2800.3	8.0909	1.942	14.604	0.029339
170	5.0993	2615.8	2819.8	8.1353	1.9441	14.998	0.030241
180	5.2156	2630.6	2839.2	8.1787	1.9468	15.394	0.03116
190	5.3319	2645.4	2858.7	8.2212	1.9501	15.794	0.032097
200	5.448	2660.3	2878.2	8.2629	1.9539	16.196	0.033049
210	5.5641	2675.2	2897.8	8.3038	1.958	16.6	0.034016
220	5.6801	2690.2	2917.4	8.344	1.9624	17.005	0.034998
230	5.7961	2705.2	2937	8.3834	1.9671	17.413	0.035995
240	5.912	2720.3	2956.7	8.4222	1.972	17.822	0.037004
250	6.0278	2735.4	2976.5	8.4603	1.9771	18.232	0.038027
260	6.1437	2750.5	2996.3	8.4977	1.9823	18.643	0.039063
270	6.2594	2765.7	3016.1	8.5346	1.9877	19.056	0.040111
280	6.3752	2781	3036	8.5709	1.9932	19.469	0.041171
290	6.4909	2796.3	3056	8.6067	1.9989	19.883	0.042242
300	6.6066	2811.7	3076	8.6419	2.0046	20.297	0.043325
320	6.838	2842.7	3116.2	8.7109	2.0164	21.128	0.045522
340	7.0693	2873.9	3156.7	8.778	2.0284	21.959	0.047761
360	7.3005	2905.3	3197.4	8.8433	2.0408	22.791	0.050039
380	7.5316	2937	3238.3	8.9069	2.0533	23.622	0.052354
400	7.7628	2969	3279.5	8.9691	2.0661	24.453	0.054705
420	7.9938	3001.2	3320.9	9.0297	2.079	25.282	0.057089
440	8.2249	3033.7	3362.6	9.0891	2.0921	26.108	0.059506
460	8.4559	3066.4	3404.6	9.1471	2.1053	26.933	0.061954
480	8.6869	3099.4	3446.9	9.2039	2.1187	27.755	0.064432
500	8.9179	3132.7	3489.4	9.2596	2.1323	28.574	0.066938
520	9.1488	3166.2	3532.2	9.3143	2.1459	29.39	0.069472
540	9.3798	3200	3575.2	9.3679	2.1597	30.202	0.072032
560	9.6107	3234.1	3618.5	9.4205	2.1735	31.01	0.074617
580	9.8416	3268.5	3662.2	9.4723	2.1875	31.815	0.077227
600	10.073	3303.1	3706	9.5231	2.2015	32.615	0.07986
620	10.303	3338.1	3750.2	9.5731	2.2156	33.411	0.082516
640	10.534	3373.3	3794.7	9.6223	2.2297	34.203	0.085194
660	10.765	3408.8	3839.4	9.6708	2.2439	34.991	0.087892
680	10.996	3444.6	3884.4	9.7185	2.258	35.774	0.090611
700	11.227	3480.6	3929.7	9.7656	2.2722	36.552	0.093349
720	11.458	3517	3975.3	9.8119	2.2864	37.326	0.096105
740	11.689	3553.6	4021.2	9.8577	2.3006	38.095	0.09888
760	11.919	3590.6	4067.3	9.9028	2.3147	38.859	0.10167
780	12.15	3627.8	4113.8	9.9473	2.3288	39.619	0.10448
800	12.381	3665.2	4160.5	9.9912	2.3428	40.374	0.10731

Superheated steam / Subcooled water: Pressure 0.6 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.019	42.079	0.15108	4.1953	1305.9	0.58003
20	0.0010018	83.908	83.968	0.29647	4.1842	1001.6	0.59844
30	0.0010044	125.72	125.78	0.43674	4.1799	797.35	0.61548
40	0.0010079	167.52	167.58	0.57238	4.1795	652.97	0.63061
50	0.0010121	209.32	209.38	0.70379	4.1814	546.84	0.64358
60	0.0010171	251.15	251.21	0.83127	4.185	466.39	0.65437
70	0.0010228	293.03	293.09	0.95512	4.1902	403.88	0.66311
80	0.001029	334.96	335.02	1.0756	4.1968	354.34	0.66999
85.926	0.0010331	359.84	359.91	1.1454	4.2016	329.68	0.67329
85.926	2.7317	2489	2652.9	7.5311	2.0296	11.791	0.023601
90	2.7645	2495.2	2661.1	7.554	2.0158	11.938	0.023881
100	2.8445	2510.5	2681.1	7.6084	1.9928	12.303	0.024594
110	2.924	2525.5	2701	7.6609	1.978	12.674	0.025339
120	3.0031	2540.5	2720.7	7.7117	1.968	13.05	0.026113
130	3.0819	2555.4	2740.3	7.761	1.9614	13.43	0.026914
140	3.1604	2570.3	2759.9	7.809	1.9572	13.815	0.027739
150	3.2387	2585.2	2779.5	7.8558	1.955	14.203	0.028588
160	3.3169	2600	2799	7.9015	1.9542	14.595	0.029458
170	3.3949	2614.9	2818.6	7.9461	1.9546	14.989	0.030347
180	3.4728	2629.8	2838.1	7.9897	1.956	15.387	0.031256
190	3.5506	2644.7	2857.7	8.0324	1.9582	15.787	0.032183
200	3.6283	2659.6	2877.3	8.0743	1.9609	16.189	0.033127
210	3.7059	2674.6	2896.9	8.1153	1.9642	16.594	0.034087
220	3.7834	2689.6	2916.6	8.1556	1.968	17	0.035063
230	3.8609	2704.6	2936.3	8.1952	1.9721	17.408	0.036053
240	3.9384	2719.7	2956	8.234	1.9765	17.817	0.037058
250	4.0158	2734.9	2975.8	8.2722	1.9811	18.228	0.038076
260	4.0932	2750.1	2995.7	8.3098	1.986	18.64	0.039108
270	4.1705	2765.3	3015.5	8.3467	1.9911	19.052	0.040152
280	4.2478	2780.6	3035.5	8.3831	1.9963	19.466	0.041209
290	4.3251	2796	3055.5	8.4189	2.0017	19.88	0.042278
300	4.4023	2811.4	3075.5	8.4542	2.0072	20.295	0.043358
320	4.5567	2842.4	3115.8	8.5232	2.0186	21.126	0.045551
340	4.7111	2873.6	3156.3	8.5904	2.0303	21.958	0.047786
360	4.8654	2905.1	3197	8.6557	2.0424	22.79	0.050062
380	5.0196	2936.8	3238	8.7194	2.0547	23.621	0.052374
400	5.1738	2968.7	3279.2	8.7816	2.0673	24.452	0.054723
420	5.328	3001	3320.7	8.8423	2.0801	25.281	0.057106
440	5.4821	3033.5	3362.4	8.9017	2.0931	26.108	0.059522
460	5.6362	3066.2	3404.4	8.9597	2.1062	26.933	0.061969
480	5.7903	3099.2	3446.6	9.0166	2.1195	27.755	0.064446
500	5.9444	3132.5	3489.2	9.0723	2.133	28.574	0.066951
520	6.0984	3166.1	3532	9.127	2.1466	29.39	0.069485
540	6.2524	3199.9	3575	9.1806	2.1603	30.202	0.072044
560	6.4064	3234	3618.4	9.2332	2.1741	31.011	0.074629
580	6.5604	3268.4	3662	9.285	2.188	31.815	0.077239
600	6.7144	3303	3705.9	9.3358	2.202	32.616	0.079872
620	6.8684	3338	3750.1	9.3859	2.216	33.412	0.082528
640	7.0223	3373.2	3794.5	9.4351	2.2301	34.204	0.085205
660	7.1763	3408.7	3839.3	9.4836	2.2442	34.991	0.087903
680	7.3302	3444.5	3884.3	9.5313	2.2584	35.774	0.090622
700	7.4841	3480.6	3929.6	9.5784	2.2725	36.553	0.09336
720	7.6381	3516.9	3975.2	9.6247	2.2867	37.327	0.096116
740	7.792	3553.6	4021.1	9.6705	2.3008	38.096	0.09889
760	7.9459	3590.5	4067.2	9.7156	2.3149	38.86	0.10168
780	8.0998	3627.7	4113.7	9.7601	2.329	39.62	0.10449
800	8.2537	3665.2	4160.4	9.804	2.343	40.375	0.10731

Superheated steam / Subcooled water: Pressure 0.8 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.018	42.098	0.15108	4.1952	1305.9	0.58004
20	0.0010018	83.907	83.987	0.29647	4.1841	1001.6	0.59845
30	0.0010044	125.72	125.8	0.43673	4.1799	797.35	0.61549
40	0.0010079	167.52	167.6	0.57237	4.1795	652.98	0.63062
50	0.0010121	209.32	209.4	0.70378	4.1814	546.84	0.64358
60	0.0010171	251.15	251.23	0.83126	4.185	466.39	0.65438
70	0.0010228	293.02	293.11	0.9551	4.1901	403.89	0.66312
80	0.001029	334.96	335.04	1.0756	4.1968	354.34	0.67
90	0.0010359	376.96	377.05	1.1929	4.2053	314.4	0.67526
93.486	0.0010385	391.63	391.71	1.233	4.2087	302.29	0.67674
93.486	2.0871	2498.2	2665.2	7.4339	2.0551	12.047	0.024387
100	2.1267	2508.4	2678.5	7.4699	2.0322	12.287	0.024835
110	2.187	2523.7	2698.7	7.5233	2.0088	12.659	0.025552
120	2.2469	2538.9	2718.7	7.5749	1.993	13.036	0.026302
130	2.3065	2554	2738.6	7.6248	1.982	13.418	0.027082
140	2.3658	2569.1	2758.3	7.6733	1.9745	13.804	0.027889
150	2.4249	2584.1	2778.1	7.7204	1.9696	14.193	0.028721
160	2.4839	2599	2797.7	7.7664	1.9667	14.586	0.029577
170	2.5427	2614	2817.4	7.8113	1.9654	14.981	0.030455
180	2.6013	2628.9	2837.1	7.8551	1.9654	15.379	0.031353
190	2.6599	2643.9	2856.7	7.898	1.9663	15.78	0.03227
200	2.7184	2658.9	2876.4	7.94	1.9681	16.183	0.033206
210	2.7768	2673.9	2896.1	7.9812	1.9706	16.588	0.034158
220	2.8351	2689	2915.8	8.0216	1.9736	16.995	0.035127
230	2.8934	2704.1	2935.5	8.0613	1.9771	17.403	0.036112
240	2.9516	2719.2	2955.3	8.1002	1.981	17.813	0.037111
250	3.0098	2734.4	2975.2	8.1385	1.9852	18.224	0.038125
260	3.0679	2749.6	2995	8.1761	1.9897	18.636	0.039153
270	3.126	2764.9	3015	8.2131	1.9944	19.049	0.040194
280	3.1841	2780.2	3034.9	8.2496	1.9994	19.463	0.041247
290	3.2421	2795.6	3055	8.2854	2.0045	19.877	0.042313
300	3.3001	2811	3075	8.3208	2.0098	20.293	0.04339
320	3.4161	2842	3115.3	8.3899	2.0208	21.124	0.045579
340	3.532	2873.3	3155.9	8.4571	2.0322	21.956	0.047811
360	3.6478	2904.8	3196.6	8.5225	2.0441	22.788	0.050084
380	3.7636	2936.5	3237.6	8.5863	2.0562	23.62	0.052395
400	3.8794	2968.5	3278.9	8.6485	2.0686	24.451	0.054742
420	3.9951	3000.8	3320.4	8.7092	2.0812	25.281	0.057123
440	4.1107	3033.3	3362.1	8.7686	2.0941	26.108	0.059538
460	4.2264	3066	3404.1	8.8267	2.1071	26.933	0.061984
480	4.342	3099	3446.4	8.8836	2.1203	27.755	0.06446
500	4.4576	3132.3	3488.9	8.9393	2.1337	28.574	0.066965
520	4.5732	3165.9	3531.8	8.994	2.1472	29.39	0.069498
540	4.6887	3199.7	3574.8	9.0476	2.1609	30.203	0.072057
560	4.8043	3233.9	3618.2	9.1003	2.1746	31.011	0.074642
580	4.9198	3268.2	3661.8	9.1521	2.1885	31.816	0.077251
600	5.0353	3302.9	3705.7	9.2029	2.2024	32.616	0.079884
620	5.1508	3337.9	3749.9	9.253	2.2164	33.413	0.082539
640	5.2663	3373.1	3794.4	9.3022	2.2305	34.205	0.085217
660	5.3818	3408.6	3839.1	9.3507	2.2446	34.992	0.087915
680	5.4973	3444.4	3884.2	9.3984	2.2587	35.775	0.090633
700	5.6128	3480.5	3929.5	9.4455	2.2728	36.554	0.09337
720	5.7283	3516.8	3975.1	9.4919	2.287	37.327	0.096127
740	5.8437	3553.5	4021	9.5376	2.3011	38.097	0.098901
760	5.9592	3590.4	4067.1	9.5827	2.3152	38.861	0.10169
780	6.0746	3627.6	4113.6	9.6273	2.3292	39.621	0.1045
800	6.1901	3665.1	4160.3	9.6712	2.3432	40.376	0.10732

Superheated steam / Subcooled water: Pressure 1 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.018	42.118	0.15108	4.1952	1305.9	0.58005
20	0.0010018	83.906	84.006	0.29646	4.1841	1001.6	0.59846
30	0.0010044	125.72	125.82	0.43673	4.1798	797.35	0.6155
40	0.0010078	167.51	167.62	0.57237	4.1794	652.98	0.63063
50	0.0010121	209.32	209.42	0.70377	4.1813	546.85	0.64359
60	0.0010171	251.15	251.25	0.83125	4.185	466.4	0.65439
70	0.0010227	293.02	293.12	0.95509	4.1901	403.89	0.66313
80	0.001029	334.95	335.05	1.0755	4.1968	354.35	0.67001
90	0.0010359	376.96	377.06	1.1928	4.2052	314.41	0.67527
99.606	0.0010432	417.4	417.5	1.3028	4.2152	282.91	0.67897
99.606	1.6939	2505.6	2674.9	7.3588	2.0784	12.256	0.025053
100	1.6959	2506.2	2675.8	7.361	2.0766	12.27	0.025079
110	1.7447	2521.9	2696.3	7.4155	2.0415	12.644	0.025767
120	1.7932	2537.3	2716.6	7.4678	2.019	13.023	0.026492
130	1.8412	2552.6	2736.7	7.5183	2.0034	13.406	0.027251
140	1.8891	2567.8	2756.7	7.5672	1.9923	13.793	0.028039
150	1.9367	2582.9	2776.6	7.6148	1.9846	14.183	0.028856
160	1.9841	2598	2796.4	7.661	1.9795	14.576	0.029697
170	2.0313	2613.1	2816.2	7.7062	1.9764	14.973	0.030563
180	2.0785	2628.1	2836	7.7503	1.9749	15.372	0.03145
190	2.1255	2643.2	2855.7	7.7934	1.9746	15.773	0.032357
200	2.1724	2658.2	2875.5	7.8356	1.9754	16.177	0.033284
210	2.2193	2673.3	2895.2	7.8769	1.977	16.582	0.03423
220	2.2661	2688.4	2915	7.9174	1.9793	16.99	0.035192
230	2.3128	2703.5	2934.8	7.9572	1.9822	17.398	0.036171
240	2.3595	2718.7	2954.6	7.9962	1.9856	17.809	0.037165
250	2.4062	2733.9	2974.5	8.0346	1.9893	18.22	0.038174
260	2.4528	2749.2	2994.4	8.0723	1.9934	18.633	0.039198
270	2.4993	2764.5	3014.4	8.1094	1.9978	19.046	0.040235
280	2.5459	2779.8	3034.4	8.1459	2.0025	19.46	0.041285
290	2.5924	2795.2	3054.4	8.1818	2.0074	19.875	0.042348
300	2.6388	2810.6	3074.5	8.2172	2.0124	20.29	0.043423
320	2.7317	2841.7	3114.9	8.2864	2.023	21.122	0.045608
340	2.8246	2873	3155.5	8.3536	2.0341	21.954	0.047837
360	2.9173	2904.5	3196.3	8.4191	2.0457	22.787	0.050107
380	3.01	2936.3	3237.3	8.4829	2.0576	23.619	0.052415
400	3.1027	2968.3	3278.6	8.5452	2.0698	24.451	0.05476
420	3.1953	3000.6	3320.1	8.6059	2.0823	25.28	0.057141
440	3.2879	3033.1	3361.9	8.6653	2.0951	26.108	0.059554
460	3.3805	3065.8	3403.9	8.7235	2.108	26.933	0.061999
480	3.473	3098.9	3446.2	8.7804	2.1211	27.755	0.064474
500	3.5655	3132.2	3488.7	8.8361	2.1344	28.575	0.066979
520	3.658	3165.8	3531.6	8.8908	2.1479	29.391	0.069511
540	3.7505	3199.6	3574.7	8.9445	2.1615	30.203	0.07207
560	3.843	3233.7	3618	8.9972	2.1752	31.012	0.074654
580	3.9354	3268.1	3661.7	9.0489	2.189	31.816	0.077263
600	4.0279	3302.8	3705.6	9.0998	2.2029	32.617	0.079896
620	4.1203	3337.7	3749.8	9.1499	2.2168	33.413	0.082551
640	4.2127	3373	3794.3	9.1991	2.2309	34.205	0.085228
660	4.3052	3408.5	3839	9.2476	2.2449	34.993	0.087926
680	4.3976	3444.3	3884	9.2954	2.259	35.776	0.090644
700	4.49	3480.4	3929.4	9.3424	2.2731	36.554	0.093381
720	4.5824	3516.7	3975	9.3888	2.2873	37.328	0.096137
740	4.6747	3553.4	4020.9	9.4345	2.3014	38.097	0.098911
760	4.7671	3590.3	4067	9.4797	2.3154	38.862	0.1017
780	4.8595	3627.5	4113.5	9.5242	2.3295	39.621	0.10451
800	4.9519	3665	4160.2	9.5681	2.3434	40.376	0.10733

Superheated steam / Subcooled water: Pressure 2 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010003	42.015	42.215	0.15107	4.1948	1305.8	0.5801
20	0.0010018	83.9	84.1	0.29644	4.1837	1001.6	0.59851
30	0.0010043	125.71	125.91	0.4367	4.1796	797.34	0.61555
40	0.0010078	167.5	167.7	0.57233	4.1792	652.99	0.63067
50	0.0010121	209.3	209.5	0.70372	4.1811	546.86	0.64364
60	0.001017	251.13	251.33	0.8312	4.1847	466.42	0.65443
70	0.0010227	293	293.2	0.95503	4.1899	403.92	0.66318
80	0.001029	334.93	335.13	1.0755	4.1965	354.37	0.67007
90	0.0010359	376.93	377.14	1.1928	4.205	314.43	0.67532
100	0.0010434	419.03	419.24	1.3071	4.2154	281.77	0.67915
110	0.0010516	461.25	461.46	1.4188	4.2282	254.71	0.68172
120	0.0010603	503.6	503.81	1.5279	4.2435	232.05	0.68319
120.21	0.0010605	504.49	504.7	1.5302	4.2439	231.62	0.68321
120.21	0.88568	2529.1	2706.2	7.1269	2.1782	12.963	0.027493
130	0.91037	2545.2	2727.3	7.1797	2.1243	13.345	0.028123
140	0.93524	2561.3	2748.3	7.2313	2.0899	13.737	0.028813
150	0.95986	2577.1	2769.1	7.281	2.0656	14.133	0.029544
160	0.98426	2592.8	2789.7	7.329	2.0478	14.531	0.030311
170	1.0085	2608.4	2810.1	7.3756	2.0346	14.931	0.031112
180	1.0326	2623.8	2830.4	7.4209	2.0249	15.334	0.031942
190	1.0566	2639.3	2850.6	7.465	2.018	15.739	0.0328
200	1.0805	2654.6	2870.7	7.5081	2.0133	16.146	0.033684
210	1.1043	2670	2890.8	7.5501	2.0103	16.554	0.03459
220	1.128	2685.3	2910.9	7.5913	2.0088	16.964	0.035519
230	1.1517	2700.7	2931	7.6316	2.0085	17.375	0.036468
240	1.1753	2716.1	2951.1	7.6712	2.0091	17.787	0.037436
250	1.1989	2731.4	2971.2	7.71	2.0105	18.2	0.038422
260	1.2224	2746.8	2991.3	7.748	2.0125	18.615	0.039425
270	1.2459	2762.3	3011.5	7.7855	2.0152	19.03	0.040443
280	1.2694	2777.8	3031.6	7.8223	2.0183	19.445	0.041477
290	1.2928	2793.3	3051.8	7.8584	2.0218	19.862	0.042526
300	1.3162	2808.8	3072.1	7.8941	2.0256	20.278	0.043588
320	1.363	2840.1	3112.7	7.9637	2.0342	21.112	0.045751
340	1.4097	2871.5	3153.4	8.0313	2.0437	21.947	0.047963
360	1.4563	2903.2	3194.4	8.0971	2.054	22.781	0.050219
380	1.5028	2935	3235.6	8.1611	2.0649	23.615	0.052517
400	1.5493	2967.1	3277	8.2236	2.0762	24.447	0.054854
420	1.5958	2999.5	3318.7	8.2845	2.088	25.278	0.057227
440	1.6422	3032.1	3360.5	8.3441	2.1001	26.107	0.059634
460	1.6887	3064.9	3402.7	8.4023	2.1125	26.933	0.062075
480	1.7351	3098	3445	8.4594	2.1252	27.756	0.064546
500	1.7814	3131.4	3487.7	8.5152	2.1381	28.576	0.067047
520	1.8278	3165	3530.6	8.57	2.1512	29.392	0.069577
540	1.8741	3198.9	3573.7	8.6237	2.1645	30.205	0.072134
560	1.9204	3233.1	3617.1	8.6765	2.1779	31.014	0.074717
580	1.9667	3267.5	3660.8	8.7283	2.1915	31.819	0.077324
600	2.013	3302.2	3704.8	8.7792	2.2052	32.62	0.079956
620	2.0593	3337.2	3749	8.8293	2.2189	33.417	0.08261
640	2.1056	3372.4	3793.6	8.8786	2.2328	34.209	0.085286
660	2.1518	3408	3838.4	8.9272	2.2467	34.997	0.087983
680	2.1981	3443.8	3883.4	8.975	2.2607	35.78	0.0907
700	2.2443	3479.9	3928.8	9.022	2.2747	36.558	0.093436
720	2.2906	3516.3	3974.4	9.0685	2.2887	37.332	0.096191
740	2.3368	3553	4020.3	9.1142	2.3027	38.102	0.098964
760	2.383	3589.9	4066.5	9.1594	2.3167	38.866	0.10175
780	2.4293	3627.1	4113	9.2039	2.3306	39.626	0.10456
800	2.4755	3664.7	4159.8	9.2479	2.3445	40.381	0.10738

Superheated steam / Subcooled water: Pressure 3 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010002	42.013	42.313	0.15106	4.1944	1305.7	0.58014
20	0.0010017	83.894	84.194	0.29642	4.1834	1001.5	0.59855
30	0.0010043	125.7	126	0.43666	4.1793	797.33	0.61559
40	0.0010078	167.49	167.79	0.57229	4.1789	652.99	0.63072
50	0.001012	209.29	209.59	0.70368	4.1809	546.88	0.64369
60	0.001017	251.11	251.42	0.83114	4.1845	466.44	0.65448
70	0.0010226	292.98	293.29	0.95497	4.1896	403.94	0.66322
80	0.0010289	334.9	335.21	1.0754	4.1963	354.4	0.67012
90	0.0010358	376.91	377.22	1.1927	4.2048	314.46	0.67537
100	0.0010434	419	419.32	1.3071	4.2152	281.8	0.6792
110	0.0010515	461.21	461.53	1.4187	4.228	254.74	0.68178
120	0.0010603	503.56	503.88	1.5278	4.2433	232.08	0.68325
130	0.0010697	546.08	546.4	1.6346	4.2614	212.9	0.68372
133.52	0.0010732	561.1	561.43	1.6717	4.2686	206.85	0.68366
133.52	0.60576	2543.2	2724.9	6.9916	2.263	13.423	0.02924
140	0.61697	2554.3	2739.4	7.0269	2.2106	13.681	0.029622
150	0.63401	2571	2761.2	7.0791	2.159	14.082	0.030259
160	0.65081	2587.4	2782.6	7.1291	2.1241	14.485	0.030946
170	0.66742	2603.5	2803.7	7.1773	2.0985	14.89	0.031677
180	0.68387	2619.4	2824.6	7.2239	2.0793	15.296	0.032448
190	0.7002	2635.2	2845.3	7.2691	2.0647	15.705	0.033253
200	0.71642	2651	2865.9	7.3131	2.0537	16.114	0.034091
210	0.73256	2666.6	2886.4	7.356	2.0457	16.525	0.034958
220	0.74862	2682.2	2906.8	7.3978	2.0399	16.938	0.035851
230	0.76461	2697.8	2927.2	7.4387	2.036	17.351	0.036769
240	0.78055	2713.4	2947.5	7.4788	2.0336	17.766	0.03771
250	0.79644	2728.9	2967.9	7.518	2.0324	18.181	0.038672
260	0.81229	2744.5	2988.2	7.5565	2.0323	18.597	0.039654
270	0.8281	2760.1	3008.5	7.5943	2.033	19.014	0.040654
280	0.84388	2775.7	3028.8	7.6314	2.0344	19.431	0.041671
290	0.85962	2791.3	3049.2	7.6678	2.0365	19.848	0.042705
300	0.87534	2807	3069.6	7.7037	2.0391	20.266	0.043754
320	0.90672	2838.4	3110.4	7.7738	2.0456	21.103	0.045896
340	0.93801	2870	3151.4	7.8417	2.0535	21.939	0.04809
360	0.96924	2901.8	3192.6	7.9078	2.0624	22.775	0.050333
380	1.0004	2933.8	3233.9	7.9721	2.0722	23.611	0.05262
400	1.0315	2966	3275.5	8.0347	2.0826	24.444	0.054947
420	1.0626	2998.4	3317.2	8.0959	2.0936	25.276	0.057313
440	1.0937	3031.1	3359.2	8.1556	2.1051	26.106	0.059715
460	1.1247	3064	3401.4	8.214	2.117	26.932	0.062151
480	1.1557	3097.2	3443.9	8.2711	2.1292	27.756	0.064618
500	1.1867	3130.6	3486.6	8.3271	2.1417	28.577	0.067116
520	1.2177	3164.3	3529.6	8.3819	2.1545	29.394	0.069643
540	1.2486	3198.2	3572.8	8.4357	2.1675	30.207	0.072198
560	1.2796	3232.4	3616.3	8.4886	2.1806	31.017	0.074779
580	1.3105	3266.9	3660	8.5404	2.194	31.822	0.077385
600	1.3414	3301.6	3704	8.5914	2.2075	32.623	0.080016
620	1.3723	3336.6	3748.3	8.6416	2.2211	33.42	0.082669
640	1.4032	3371.9	3792.9	8.6909	2.2348	34.213	0.085344
660	1.4341	3407.5	3837.7	8.7395	2.2485	35.001	0.08804
680	1.4649	3443.3	3882.8	8.7873	2.2624	35.784	0.090756
700	1.4958	3479.5	3928.2	8.8344	2.2762	36.563	0.093491
720	1.5266	3515.9	3973.9	8.8809	2.2901	37.336	0.096245
740	1.5575	3552.6	4019.8	8.9267	2.304	38.106	0.099016
760	1.5884	3589.5	4066	8.9719	2.3179	38.87	0.1018
780	1.6192	3626.8	4112.5	9.0164	2.3318	39.63	0.10461
800	1.65	3664.3	4159.3	9.0604	2.3456	40.385	0.10743

Superheated steam / Subcooled water: Pressure 4 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010002	42.01	42.41	0.15105	4.194	1305.5	0.58019
20	0.0010017	83.888	84.288	0.2964	4.1831	1001.5	0.5986
30	0.0010042	125.69	126.09	0.43663	4.179	797.32	0.61564
40	0.0010077	167.48	167.88	0.57225	4.1787	653	0.63076
50	0.001012	209.27	209.68	0.70363	4.1807	546.9	0.64373
60	0.001017	251.09	251.5	0.83109	4.1843	466.46	0.65453
70	0.0010226	292.96	293.37	0.95491	4.1894	403.97	0.66327
80	0.0010289	334.88	335.29	1.0753	4.1961	354.43	0.67017
90	0.0010358	376.88	377.29	1.1926	4.2045	314.49	0.67543
100	0.0010433	418.97	419.39	1.307	4.215	281.82	0.67926
110	0.0010514	461.18	461.6	1.4186	4.2277	254.77	0.68184
120	0.0010602	503.53	503.95	1.5277	4.243	232.1	0.68331
130	0.0010696	546.04	546.47	1.6345	4.2611	212.93	0.68378
140	0.0010797	588.75	589.19	1.7392	4.2825	196.55	0.68332
143.61	0.0010836	604.22	604.65	1.7765	4.291	191.22	0.68294
143.61	0.46238	2553.1	2738.1	6.8955	2.3396	13.771	0.030656
150	0.47088	2564.4	2752.8	6.9306	2.2747	14.031	0.031005
160	0.48393	2581.6	2775.2	6.9829	2.2114	14.439	0.031604
170	0.49676	2598.4	2797.1	7.0329	2.1693	14.848	0.032261
180	0.50941	2614.8	2818.6	7.0809	2.1384	15.258	0.032967
190	0.52193	2631.1	2839.9	7.1273	2.1149	15.67	0.033718
200	0.53433	2647.2	2860.9	7.1723	2.0969	16.083	0.034507
210	0.54665	2663.2	2881.8	7.216	2.0831	16.497	0.035332
220	0.55888	2679.1	2902.6	7.2586	2.0726	16.912	0.036189
230	0.57104	2694.9	2923.3	7.3001	2.0648	17.328	0.037076
240	0.58314	2710.6	2943.9	7.3407	2.0591	17.744	0.037988
250	0.5952	2726.4	2964.5	7.3804	2.0552	18.161	0.038926
260	0.6072	2742.1	2985	7.4193	2.0527	18.579	0.039885
270	0.61917	2757.9	3005.5	7.4574	2.0514	18.998	0.040866
280	0.63111	2773.6	3026	7.4948	2.0511	19.416	0.041867
290	0.64301	2789.3	3046.6	7.5316	2.0517	19.835	0.042886
300	0.65489	2805.1	3067.1	7.5677	2.0529	20.254	0.043922
320	0.67858	2836.7	3108.2	7.6382	2.0572	21.093	0.046041
340	0.70218	2868.5	3149.4	7.7065	2.0634	21.932	0.048218
360	0.72572	2900.4	3190.7	7.7728	2.0709	22.77	0.050447
380	0.74921	2932.5	3232.2	7.8374	2.0796	23.606	0.052723
400	0.77264	2964.9	3273.9	7.9002	2.0891	24.441	0.055042
420	0.79605	2997.4	3315.8	7.9615	2.0994	25.274	0.0574
440	0.81941	3030.1	3357.9	8.0214	2.1102	26.105	0.059796
460	0.84275	3063.1	3400.2	8.0799	2.1215	26.932	0.062227
480	0.86607	3096.3	3442.8	8.1372	2.1333	27.757	0.064691
500	0.88936	3129.8	3485.5	8.1933	2.1454	28.578	0.067186
520	0.91263	3163.5	3528.6	8.2482	2.1578	29.396	0.06971
540	0.93589	3197.5	3571.9	8.3021	2.1705	30.21	0.072263
560	0.95913	3231.7	3615.4	8.355	2.1834	31.019	0.074842
580	0.98236	3266.2	3659.2	8.4069	2.1965	31.825	0.077447
600	1.0056	3301	3703.2	8.458	2.2098	32.627	0.080076
620	1.0288	3336.1	3747.6	8.5082	2.2232	33.424	0.082728
640	1.052	3371.4	3792.2	8.5576	2.2367	34.216	0.085402
660	1.0752	3407	3837	8.6062	2.2503	35.004	0.088097
680	1.0983	3442.9	3882.2	8.654	2.264	35.788	0.090812
700	1.1215	3479	3927.6	8.7012	2.2778	36.567	0.093546
720	1.1447	3515.4	3973.3	8.7477	2.2916	37.341	0.096299
740	1.1678	3552.1	4019.3	8.7935	2.3054	38.11	0.099069
760	1.191	3589.1	4065.5	8.8387	2.3192	38.874	0.10186
780	1.2142	3626.4	4112	8.8833	2.333	39.634	0.10466
800	1.2373	3663.9	4158.8	8.9273	2.3467	40.389	0.10748

Superheated steam / Subcooled water: Pressure 5 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010001	42.008	42.508	0.15104	4.1936	1305.4	0.58024
20	0.0010016	83.882	84.382	0.29638	4.1828	1001.4	0.59864
30	0.0010042	125.68	126.19	0.4366	4.1787	797.31	0.61568
40	0.0010077	167.47	167.97	0.57221	4.1784	653.01	0.63081
50	0.0010119	209.26	209.76	0.70358	4.1804	546.92	0.64378
60	0.0010169	251.08	251.58	0.83104	4.1841	466.48	0.65458
70	0.0010226	292.94	293.45	0.95485	4.1892	403.99	0.66332
80	0.0010288	334.86	335.37	1.0753	4.1959	354.45	0.67022
90	0.0010357	376.85	377.37	1.1926	4.2043	314.51	0.67548
100	0.0010433	418.94	419.47	1.3069	4.2148	281.85	0.67931
110	0.0010514	461.15	461.67	1.4185	4.2275	254.79	0.68189
120	0.0010602	503.49	504.02	1.5276	4.2427	232.13	0.68337
130	0.0010696	546	546.54	1.6344	4.2609	212.96	0.68384
140	0.0010797	588.71	589.25	1.7391	4.2822	196.58	0.68339
150	0.0010905	631.65	632.19	1.8418	4.307	182.47	0.68206
151.83	0.0010925	639.54	640.09	1.8604	4.312	180.09	0.68172
151.83	0.37481	2560.7	2748.1	6.8207	2.4103	14.055	0.03187
160	0.38366	2575.5	2767.4	6.8656	2.3169	14.392	0.032287
170	0.39426	2593.1	2790.2	6.9176	2.2489	14.806	0.032863
180	0.40466	2610.1	2812.4	6.9673	2.203	15.22	0.033501
190	0.41491	2626.8	2834.3	7.015	2.169	15.636	0.034193
200	0.42503	2643.3	2855.8	7.061	2.1429	16.052	0.034933
210	0.43506	2659.6	2877.2	7.1056	2.1227	16.468	0.035714
220	0.445	2675.8	2898.3	7.1489	2.107	16.886	0.036533
230	0.45487	2691.9	2919.3	7.1911	2.0949	17.304	0.037386
240	0.46467	2707.9	2940.2	7.2322	2.0857	17.723	0.03827
250	0.47443	2723.8	2961	7.2724	2.0788	18.142	0.039182
260	0.48414	2739.7	2981.8	7.3117	2.0738	18.562	0.04012
270	0.4938	2755.6	3002.5	7.3502	2.0703	18.982	0.041081
280	0.50344	2771.5	3023.2	7.388	2.0682	19.402	0.042065
290	0.51304	2787.4	3043.9	7.425	2.0672	19.822	0.043068
300	0.52261	2803.2	3064.6	7.4614	2.067	20.243	0.044091
320	0.54169	2835.1	3105.9	7.5323	2.0691	21.084	0.046188
340	0.56068	2867	3147.3	7.601	2.0734	21.924	0.048347
360	0.57961	2899.1	3188.9	7.6677	2.0796	22.764	0.050562
380	0.59848	2931.3	3230.5	7.7325	2.0871	23.602	0.052826
400	0.6173	2963.7	3272.3	7.7955	2.0957	24.438	0.055136
420	0.63609	2996.3	3314.4	7.857	2.1051	25.272	0.057488
440	0.65484	3029.1	3356.6	7.917	2.1153	26.104	0.059878
460	0.67357	3062.2	3399	7.9757	2.1261	26.932	0.062304
480	0.69227	3095.5	3441.6	8.0331	2.1373	27.757	0.064763
500	0.71094	3129	3484.5	8.0892	2.149	28.579	0.067255
520	0.7296	3162.8	3527.6	8.1443	2.1611	29.397	0.069777
540	0.74824	3196.8	3570.9	8.1983	2.1735	30.212	0.072328
560	0.76687	3231.1	3614.5	8.2512	2.1861	31.022	0.074905
580	0.78548	3265.6	3658.4	8.3032	2.199	31.828	0.077509
600	0.80409	3300.4	3702.5	8.3543	2.2121	32.63	0.080136
620	0.82268	3335.5	3746.8	8.4046	2.2253	33.427	0.082787
640	0.84126	3370.9	3791.5	8.454	2.2387	34.22	0.085461
660	0.85983	3406.5	3836.4	8.5027	2.2521	35.008	0.088155
680	0.8784	3442.4	3881.6	8.5506	2.2657	35.792	0.090869
700	0.89696	3478.5	3927	8.5977	2.2793	36.571	0.093602
720	0.91551	3515	3972.7	8.6443	2.293	37.345	0.096353
740	0.93405	3551.7	4018.7	8.6901	2.3067	38.114	0.099122
760	0.95259	3588.7	4065	8.7353	2.3205	38.879	0.10191
780	0.97113	3626	4111.6	8.78	2.3342	39.638	0.10471
800	0.98966	3663.6	4158.4	8.824	2.3479	40.393	0.10753

Superheated steam / Subcooled water: Pressure 6 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0010001	42.005	42.605	0.15103	4.1933	1305.3	0.58029
20	0.0010016	83.876	84.476	0.29636	4.1825	1001.4	0.59869
30	0.0010041	125.67	126.28	0.43657	4.1785	797.3	0.61573
40	0.0010076	167.45	168.06	0.57217	4.1782	653.02	0.63085
50	0.0010119	209.24	209.85	0.70354	4.1802	546.93	0.64383
60	0.0010169	251.06	251.67	0.83098	4.1838	466.51	0.65462
70	0.0010225	292.92	293.53	0.95479	4.189	404.02	0.66337
80	0.0010288	334.83	335.45	1.0752	4.1957	354.48	0.67027
90	0.0010357	376.83	377.45	1.1925	4.2041	314.54	0.67553
100	0.0010432	418.91	419.54	1.3068	4.2145	281.88	0.67936
110	0.0010513	461.12	461.75	1.4184	4.2272	254.82	0.68195
120	0.0010601	503.46	504.09	1.5275	4.2425	232.16	0.68343
130	0.0010695	545.96	546.61	1.6343	4.2606	212.98	0.6839
140	0.0010796	588.67	589.32	1.739	4.2819	196.6	0.68345
150	0.0010904	631.6	632.26	1.8417	4.3067	182.49	0.68213
158.83	0.0011006	669.72	670.38	1.9308	4.3318	171.59	0.68024
158.83	0.31558	2566.8	2756.1	6.7592	2.4766	14.296	0.032946
160	0.31668	2569	2759	6.7659	2.4568	14.345	0.032998
170	0.32583	2587.5	2783	6.8206	2.3419	14.764	0.033486
180	0.33475	2605.2	2806	6.872	2.2745	15.182	0.034051
190	0.3435	2622.4	2828.5	6.9211	2.2274	15.601	0.034681
200	0.35212	2639.3	2850.6	6.9683	2.192	16.02	0.035367
210	0.36063	2656	2872.4	7.0139	2.1647	16.44	0.036103
220	0.36905	2672.5	2893.9	7.058	2.1432	16.86	0.036883
230	0.3774	2688.8	2915.3	7.1008	2.1265	17.281	0.037702
240	0.38568	2705.1	2936.5	7.1426	2.1134	17.701	0.038556
250	0.3939	2721.2	2957.6	7.1832	2.1033	18.123	0.039442
260	0.40208	2737.3	2978.5	7.223	2.0956	18.544	0.040357
270	0.41021	2753.3	2999.5	7.2619	2.0899	18.966	0.041298
280	0.41831	2769.4	3020.3	7.3	2.0858	19.387	0.042264
290	0.42638	2785.4	3041.2	7.3373	2.083	19.809	0.043252
300	0.43442	2801.4	3062	7.374	2.0815	20.231	0.044261
320	0.45042	2833.4	3103.6	7.4453	2.0811	21.074	0.046335
340	0.46634	2865.5	3145.3	7.5144	2.0836	21.917	0.048477
360	0.48219	2897.7	3187	7.5813	2.0883	22.758	0.050677
380	0.49799	2930	3228.8	7.6464	2.0946	23.598	0.052931
400	0.51374	2962.5	3270.8	7.7097	2.1023	24.435	0.055231
420	0.52945	2995.2	3312.9	7.7713	2.1109	25.27	0.057576
440	0.54513	3028.1	3355.2	7.8315	2.1204	26.103	0.05996
460	0.56078	3061.3	3397.7	7.8903	2.1307	26.932	0.062381
480	0.5764	3094.6	3440.5	7.9478	2.1414	27.758	0.064836
500	0.592	3128.2	3483.4	8.0041	2.1527	28.581	0.067325
520	0.60758	3162	3526.6	8.0592	2.1644	29.399	0.069844
540	0.62315	3196.1	3570	8.1132	2.1765	30.214	0.072393
560	0.6387	3230.4	3613.6	8.1663	2.1889	31.025	0.074969
580	0.65424	3265	3657.5	8.2183	2.2015	31.831	0.077571
600	0.66976	3299.8	3701.7	8.2695	2.2144	32.633	0.080197
620	0.68528	3334.9	3746.1	8.3198	2.2274	33.431	0.082847
640	0.70078	3370.3	3790.8	8.3693	2.2406	34.224	0.085519
660	0.71628	3406	3835.7	8.418	2.2539	35.012	0.088212
680	0.73176	3441.9	3880.9	8.4659	2.2674	35.796	0.090925
700	0.74725	3478.1	3926.4	8.5131	2.2809	36.575	0.093657
720	0.76272	3514.6	3972.2	8.5597	2.2945	37.349	0.096408
740	0.77819	3551.3	4018.2	8.6056	2.3081	38.118	0.099175
760	0.79365	3588.3	4064.5	8.6508	2.3217	38.883	0.10196
780	0.80911	3625.6	4111.1	8.6954	2.3353	39.643	0.10476
800	0.82457	3663.2	4157.9	8.7395	2.349	40.397	0.10758

Superheated steam / Subcooled water: Pressure 7 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.001	42.003	42.703	0.15102	4.1929	1305.2	0.58034
20	0.0010015	83.869	84.571	0.29634	4.1822	1001.3	0.59874
30	0.0010041	125.67	126.37	0.43654	4.1782	797.29	0.61577
40	0.0010076	167.44	168.15	0.57213	4.1779	653.02	0.6309
50	0.0010118	209.23	209.93	0.70349	4.18	546.95	0.64387
60	0.0010168	251.04	251.75	0.83093	4.1836	466.53	0.65467
70	0.0010225	292.9	293.61	0.95473	4.1888	404.04	0.66342
80	0.0010287	334.81	335.53	1.0751	4.1954	354.5	0.67032
90	0.0010356	376.8	377.53	1.1924	4.2039	314.57	0.67558
100	0.0010432	418.89	419.62	1.3067	4.2143	281.9	0.67942
110	0.0010513	461.08	461.82	1.4184	4.227	254.85	0.68201
120	0.00106	503.42	504.16	1.5275	4.2422	232.18	0.68349
130	0.0010695	545.93	546.67	1.6342	4.2603	213.01	0.68396
140	0.0010795	588.63	589.38	1.7389	4.2816	196.63	0.68352
150	0.0010904	631.55	632.32	1.8416	4.3064	182.52	0.68219
160	0.0011019	674.75	675.52	1.9425	4.3351	170.26	0.68001
164.95	0.001108	696.23	697	1.9918	4.3509	164.78	0.67862
164.95	0.27277	2571.8	2762.8	6.7071	2.5393	14.507	0.03392
170	0.27687	2581.6	2775.4	6.7357	2.4566	14.721	0.034132
180	0.28476	2600	2799.4	6.7893	2.3552	15.144	0.034617
190	0.29245	2617.9	2822.6	6.8399	2.291	15.566	0.035181
200	0.3	2635.3	2845.3	6.8884	2.2446	15.989	0.035812
210	0.30744	2652.3	2867.5	6.9349	2.2091	16.411	0.0365
220	0.31478	2669.1	2889.5	6.9799	2.1813	16.834	0.037239
230	0.32204	2685.7	2911.2	7.0234	2.1595	17.257	0.038022
240	0.32923	2702.2	2932.7	7.0658	2.1422	17.68	0.038846
250	0.33637	2718.6	2954	7.107	2.1287	18.103	0.039705
260	0.34345	2734.8	2975.2	7.1472	2.1181	18.527	0.040597
270	0.3505	2751	2996.4	7.1865	2.11	18.95	0.041518
280	0.3575	2767.2	3017.5	7.2249	2.1038	19.373	0.042465
290	0.36447	2783.3	3038.5	7.2625	2.0993	19.796	0.043438
300	0.37142	2799.5	3059.4	7.2995	2.0962	20.219	0.044433
320	0.38523	2831.7	3101.3	7.3713	2.0934	21.065	0.046484
340	0.39895	2863.9	3143.2	7.4407	2.094	21.909	0.048607
360	0.41261	2896.3	3185.1	7.508	2.0972	22.752	0.050794
380	0.42621	2928.8	3227.1	7.5733	2.1023	23.593	0.053036
400	0.43977	2961.4	3269.2	7.6368	2.1089	24.432	0.055327
420	0.45328	2994.2	3311.5	7.6986	2.1168	25.269	0.057664
440	0.46676	3027.2	3353.9	7.759	2.1256	26.102	0.060042
460	0.48021	3060.4	3396.5	7.8179	2.1353	26.932	0.062458
480	0.49364	3093.8	3439.3	7.8755	2.1456	27.759	0.06491
500	0.50704	3127.4	3482.3	7.9319	2.1564	28.582	0.067395
520	0.52043	3161.3	3525.6	7.9871	2.1678	29.401	0.069912
540	0.53379	3195.4	3569	8.0412	2.1795	30.216	0.072458
560	0.54715	3229.7	3612.8	8.0943	2.1916	31.027	0.075032
580	0.56049	3264.4	3656.7	8.1465	2.204	31.834	0.077633
600	0.57381	3299.2	3700.9	8.1977	2.2167	32.636	0.080258
620	0.58713	3334.4	3745.4	8.248	2.2295	33.434	0.082907
640	0.60044	3369.8	3790.1	8.2976	2.2426	34.228	0.085578
660	0.61374	3405.5	3835.1	8.3463	2.2558	35.016	0.08827
680	0.62703	3441.4	3880.3	8.3943	2.2691	35.8	0.090982
700	0.64031	3477.6	3925.8	8.4415	2.2825	36.579	0.093713
720	0.65359	3514.1	3971.6	8.4881	2.2959	37.353	0.096462
740	0.66686	3550.9	4017.7	8.534	2.3094	38.123	0.099229
760	0.68013	3587.9	4064	8.5793	2.323	38.887	0.10201
780	0.69339	3625.2	4110.6	8.6239	2.3365	39.647	0.10481
800	0.70664	3662.8	4157.5	8.668	2.3501	40.402	0.10762

Superheated steam / Subcooled water: Pressure 8 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099996	42	42.8	0.15101	4.1925	1305.1	0.58039
20	0.0010015	83.863	84.665	0.29632	4.1819	1001.3	0.59878
30	0.0010041	125.66	126.46	0.43651	4.1779	797.28	0.61582
40	0.0010075	167.43	168.24	0.57209	4.1777	653.03	0.63094
50	0.0010118	209.21	210.02	0.70344	4.1797	546.97	0.64392
60	0.0010168	251.02	251.84	0.83088	4.1834	466.55	0.65472
70	0.0010224	292.88	293.69	0.95467	4.1885	404.07	0.66347
80	0.0010287	334.79	335.61	1.0751	4.1952	354.53	0.67037
90	0.0010356	376.78	377.6	1.1923	4.2036	314.59	0.67564
100	0.0010431	418.86	419.69	1.3067	4.2141	281.93	0.67947
110	0.0010512	461.05	461.89	1.4183	4.2267	254.87	0.68206
120	0.00106	503.39	504.23	1.5274	4.242	232.21	0.68354
130	0.0010694	545.89	546.74	1.6341	4.26	213.03	0.68403
140	0.0010795	588.58	589.45	1.7388	4.2813	196.65	0.68358
150	0.0010903	631.51	632.38	1.8414	4.306	182.54	0.68226
160	0.0011019	674.7	675.58	1.9423	4.3347	170.29	0.68008
170	0.0011143	718.2	719.09	2.0416	4.3678	159.55	0.67706
170.41	0.0011148	719.97	720.86	2.0457	4.3692	159.15	0.67691
170.41	0.24034	2576	2768.3	6.6616	2.599	14.695	0.034815
180	0.2472	2594.7	2792.4	6.7154	2.4492	15.105	0.035202
190	0.25412	2613.2	2816.5	6.7679	2.3609	15.531	0.035696
200	0.26088	2631	2839.7	6.8176	2.3009	15.957	0.036267
210	0.26752	2648.5	2862.5	6.8653	2.2561	16.383	0.036905
220	0.27405	2665.7	2884.9	6.9111	2.2214	16.808	0.037601
230	0.2805	2682.6	2907	6.9554	2.194	17.234	0.038348
240	0.28688	2699.3	2928.8	6.9984	2.1723	17.659	0.03914
250	0.2932	2715.9	2950.4	7.0401	2.155	18.084	0.039972
260	0.29947	2732.3	2971.9	7.0808	2.1414	18.509	0.040839
270	0.3057	2748.7	2993.3	7.1205	2.1307	18.934	0.041739
280	0.31189	2765	3014.5	7.1593	2.1223	19.359	0.042669
290	0.31804	2781.3	3035.7	7.1973	2.116	19.783	0.043625
300	0.32416	2797.5	3056.9	7.2345	2.1113	20.208	0.044606
320	0.33633	2830	3099	7.3068	2.1059	21.056	0.046634
340	0.34841	2862.4	3141.1	7.3766	2.1045	21.902	0.048739
360	0.36042	2894.9	3183.2	7.4441	2.1061	22.747	0.050911
380	0.37238	2927.5	3225.4	7.5097	2.11	23.589	0.053141
400	0.38428	2960.2	3267.6	7.5734	2.1157	24.429	0.055423
420	0.39615	2993.1	3310	7.6355	2.1227	25.267	0.057753
440	0.40798	3026.2	3352.6	7.696	2.1308	26.101	0.060125
460	0.41979	3059.4	3395.3	7.755	2.1399	26.932	0.062536
480	0.43157	3092.9	3438.2	7.8127	2.1497	27.759	0.064984
500	0.44332	3126.6	3481.3	7.8692	2.1602	28.583	0.067466
520	0.45506	3160.5	3524.6	7.9245	2.1712	29.403	0.06998
540	0.46678	3194.7	3568.1	7.9787	2.1826	30.219	0.072524
560	0.47848	3229.1	3611.9	8.0319	2.1944	31.03	0.075096
580	0.49017	3263.7	3655.9	8.0841	2.2066	31.837	0.077695
600	0.50185	3298.7	3700.1	8.1354	2.219	32.64	0.080319
620	0.51352	3333.8	3744.6	8.1858	2.2317	33.438	0.082967
640	0.52518	3369.3	3789.4	8.2353	2.2445	34.231	0.085637
660	0.53683	3405	3834.4	8.2841	2.2576	35.02	0.088329
680	0.54847	3440.9	3879.7	8.3321	2.2707	35.804	0.09104
700	0.56011	3477.2	3925.3	8.3794	2.284	36.583	0.09377
720	0.57174	3513.7	3971.1	8.426	2.2974	37.357	0.096517
740	0.58336	3550.5	4017.2	8.472	2.3108	38.127	0.099283
760	0.59498	3587.5	4063.5	8.5173	2.3242	38.891	0.10206
780	0.60659	3624.8	4110.1	8.5619	2.3377	39.651	0.10486
800	0.6182	3662.4	4157	8.6061	2.3512	40.406	0.10767

Superheated steam / Subcooled water: Pressure 9 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099992	41.998	42.898	0.15101	4.1921	1305	0.58043
20	0.0010014	83.857	84.759	0.2963	4.1816	1001.3	0.59883
30	0.001004	125.65	126.55	0.43648	4.1777	797.27	0.61586
40	0.0010075	167.42	168.32	0.57205	4.1775	653.04	0.63099
50	0.0010118	209.2	210.11	0.7034	4.1795	546.99	0.64396
60	0.0010167	251	251.92	0.83082	4.1832	466.57	0.65477
70	0.0010224	292.86	293.78	0.95461	4.1883	404.09	0.66352
80	0.0010286	334.77	335.69	1.075	4.195	354.56	0.67042
90	0.0010355	376.75	377.68	1.1923	4.2034	314.62	0.67569
100	0.0010431	418.83	419.77	1.3066	4.2138	281.96	0.67953
110	0.0010512	461.02	461.97	1.4182	4.2265	254.9	0.68212
120	0.0010599	503.35	504.3	1.5273	4.2417	232.24	0.6836
130	0.0010693	545.85	546.81	1.634	4.2598	213.06	0.68409
140	0.0010794	588.54	589.51	1.7387	4.281	196.68	0.68365
150	0.0010902	631.46	632.44	1.8413	4.3057	182.57	0.68233
160	0.0011018	674.65	675.64	1.9422	4.3343	170.31	0.68016
170	0.0011142	718.14	719.14	2.0415	4.3674	159.58	0.67713
175.35	0.0011212	741.55	742.56	2.094	4.3871	154.37	0.67516
175.35	0.21489	2579.6	2773	6.6213	2.6563	14.865	0.035647
180	0.21792	2589	2785.2	6.6482	2.5633	15.066	0.035806
190	0.22426	2608.3	2810.1	6.7027	2.4392	15.496	0.036224
200	0.23042	2626.7	2834.1	6.7539	2.3618	15.925	0.036733
210	0.23644	2644.6	2857.4	6.8027	2.3061	16.354	0.037319
220	0.24236	2662.1	2880.3	6.8495	2.2635	16.782	0.037971
230	0.24818	2679.4	2902.7	6.8946	2.2301	17.21	0.038679
240	0.25393	2696.3	2924.9	6.9382	2.2035	17.638	0.039438
250	0.25962	2713.1	2946.8	6.9805	2.1823	18.065	0.040242
260	0.26526	2729.8	2968.5	7.0216	2.1654	18.492	0.041085
270	0.27085	2746.4	2990.1	7.0618	2.152	18.918	0.041964
280	0.2764	2762.8	3011.6	7.1009	2.1414	19.345	0.042874
290	0.28192	2779.2	3033	7.1392	2.1331	19.771	0.043814
300	0.2874	2795.6	3054.3	7.1767	2.1267	20.196	0.044781
320	0.29829	2828.2	3096.7	7.2495	2.1186	21.046	0.046785
340	0.30909	2860.8	3139	7.3197	2.1152	21.895	0.048871
360	0.31983	2893.5	3181.3	7.3876	2.1152	22.741	0.051029
380	0.3305	2926.2	3223.7	7.4534	2.1178	23.585	0.053247
400	0.34113	2959	3266.1	7.5173	2.1224	24.427	0.05552
420	0.35172	2992	3308.6	7.5795	2.1286	25.265	0.057842
440	0.36227	3025.2	3351.2	7.6402	2.1361	26.1	0.060208
460	0.37279	3058.5	3394	7.6994	2.1446	26.932	0.062614
480	0.38329	3092	3437	7.7572	2.1539	27.76	0.065058
500	0.39376	3125.8	3480.2	7.8138	2.1639	28.585	0.067536
520	0.40422	3159.8	3523.6	7.8692	2.1745	29.405	0.070048
540	0.41465	3194	3567.2	7.9235	2.1856	30.221	0.07259
560	0.42508	3228.4	3611	7.9768	2.1972	31.033	0.07516
580	0.43549	3263.1	3655.1	8.029	2.2091	31.84	0.077758
600	0.44588	3298.1	3699.4	8.0803	2.2213	32.643	0.080381
620	0.45627	3333.3	3743.9	8.1308	2.2338	33.442	0.083028
640	0.46665	3368.7	3788.7	8.1804	2.2465	34.235	0.085697
660	0.47702	3404.5	3833.8	8.2292	2.2594	35.024	0.088387
680	0.48738	3440.4	3879.1	8.2773	2.2724	35.808	0.091097
700	0.49773	3476.7	3924.7	8.3246	2.2856	36.587	0.093826
720	0.50808	3513.2	3970.5	8.3712	2.2988	37.362	0.096573
740	0.51842	3550	4016.6	8.4172	2.3121	38.131	0.099337
760	0.52876	3587.1	4063	8.4625	2.3255	38.896	0.10212
780	0.53909	3624.5	4109.6	8.5072	2.3389	39.655	0.10491
800	0.54941	3662.1	4156.6	8.5514	2.3523	40.41	0.10772

Superheated steam / Subcooled water: Pressure 10 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099987	41.995	42.995	0.151	4.1918	1304.9	0.58048
20	0.0010014	83.851	84.853	0.29628	4.1813	1001.2	0.59887
30	0.001004	125.64	126.64	0.43645	4.1774	797.26	0.61591
40	0.0010074	167.41	168.41	0.57202	4.1772	653.05	0.63104
50	0.0010117	209.18	210.19	0.70335	4.1793	547	0.64401
60	0.0010167	250.99	252	0.83077	4.183	466.6	0.65481
70	0.0010223	292.84	293.86	0.95455	4.1881	404.12	0.66357
80	0.0010286	334.74	335.77	1.075	4.1948	354.58	0.67047
90	0.0010355	376.72	377.76	1.1922	4.2032	314.65	0.67574
100	0.001043	418.8	419.84	1.3065	4.2136	281.98	0.67958
110	0.0010511	460.99	462.04	1.4181	4.2263	254.93	0.68218
120	0.0010599	503.32	504.38	1.5272	4.2415	232.26	0.68366
130	0.0010693	545.81	546.88	1.6339	4.2595	213.08	0.68415
140	0.0010794	588.5	589.58	1.7386	4.2807	196.71	0.68371
150	0.0010901	631.41	632.5	1.8412	4.3054	182.59	0.6824
160	0.0011017	674.59	675.7	1.9421	4.334	170.34	0.68023
170	0.0011141	718.08	719.2	2.0414	4.367	159.6	0.6772
179.88	0.0011272	761.39	762.52	2.1381	4.4045	150.24	0.67337
179.88	0.19436	2582.7	2777.1	6.585	2.7114	15.021	0.036427
180	0.19444	2583	2777.4	6.5857	2.7082	15.027	0.036431
190	0.20034	2603.2	2803.5	6.6427	2.5287	15.461	0.036768
200	0.20602	2622.2	2828.3	6.6955	2.4281	15.894	0.037211
210	0.21156	2640.6	2852.2	6.7456	2.3594	16.325	0.037742
220	0.21698	2658.5	2875.5	6.7934	2.308	16.756	0.038347
230	0.22231	2676.1	2898.4	6.8393	2.2679	17.187	0.039016
240	0.22756	2693.3	2920.9	6.8836	2.2361	17.616	0.039741
250	0.23275	2710.4	2943.1	6.9265	2.2106	18.046	0.040516
260	0.23788	2727.2	2965.1	6.9681	2.1903	18.474	0.041333
270	0.24296	2744	2986.9	7.0087	2.174	18.903	0.04219
280	0.24801	2760.6	3008.6	7.0482	2.1609	19.331	0.043082
290	0.25301	2777.2	3030.2	7.0868	2.1506	19.758	0.044005
300	0.25799	2793.6	3051.6	7.1246	2.1425	20.185	0.044957
320	0.26786	2826.5	3094.4	7.1979	2.1316	21.037	0.046937
340	0.27764	2859.3	3136.9	7.2685	2.126	21.888	0.049005
360	0.28735	2892.1	3179.4	7.3367	2.1244	22.736	0.051147
380	0.297	2924.9	3221.9	7.4028	2.1257	23.581	0.053354
400	0.30661	2957.9	3264.5	7.4669	2.1293	24.424	0.055618
420	0.31617	2990.9	3307.1	7.5294	2.1346	25.263	0.057932
440	0.32569	3024.2	3349.9	7.5902	2.1414	26.1	0.060291
460	0.33519	3057.6	3392.8	7.6495	2.1492	26.932	0.062692
480	0.34466	3091.2	3435.8	7.7075	2.1581	27.761	0.065132
500	0.35411	3125	3479.1	7.7641	2.1677	28.586	0.067607
520	0.36354	3159	3522.6	7.8196	2.1779	29.407	0.070116
540	0.37295	3193.3	3566.2	7.874	2.1887	30.223	0.072656
560	0.38235	3227.8	3610.1	7.9273	2.2	31.036	0.075225
580	0.39174	3262.5	3654.2	7.9796	2.2117	31.843	0.077821
600	0.40111	3297.5	3698.6	8.031	2.2237	32.647	0.080443
620	0.41047	3332.7	3743.2	8.0815	2.2359	33.445	0.083088
640	0.41982	3368.2	3788	8.1312	2.2485	34.239	0.085757
660	0.42916	3403.9	3833.1	8.18	2.2612	35.028	0.088446
680	0.4385	3440	3878.5	8.2281	2.2741	35.812	0.091155
700	0.44783	3476.2	3924.1	8.2755	2.2871	36.591	0.093883
720	0.45715	3512.8	3970	8.3221	2.3003	37.366	0.096628
740	0.46647	3549.6	4016.1	8.3681	2.3135	38.135	0.099391
760	0.47578	3586.7	4062.5	8.4135	2.3268	38.9	0.10217
780	0.48508	3624.1	4109.2	8.4582	2.3401	39.66	0.10496
800	0.49438	3661.7	4156.1	8.5024	2.3534	40.414	0.10777

Superheated steam / Subcooled water: Pressure 15 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099963	41.983	43.482	0.15095	4.1899	1304.4	0.58073
20	0.0010012	83.821	85.323	0.29617	4.1797	1001	0.5991
30	0.0010037	125.59	127.1	0.4363	4.176	797.21	0.61613
40	0.0010072	167.34	168.86	0.57182	4.176	653.09	0.63126
50	0.0010115	209.11	210.62	0.70312	4.1781	547.09	0.64424
60	0.0010165	250.9	252.42	0.83051	4.1819	466.71	0.65505
70	0.0010221	292.73	294.27	0.95426	4.187	404.24	0.66381
80	0.0010284	334.63	336.17	1.0746	4.1937	354.71	0.67073
90	0.0010353	376.59	378.15	1.1918	4.2021	314.78	0.67601
100	0.0010427	418.65	420.22	1.3061	4.2125	282.12	0.67986
110	0.0010509	460.83	462.4	1.4177	4.2251	255.06	0.68246
120	0.0010596	503.14	504.73	1.5267	4.2402	232.39	0.68396
130	0.001069	545.61	547.22	1.6334	4.2581	213.21	0.68446
140	0.001079	588.28	589.9	1.738	4.2792	196.83	0.68404
150	0.0010898	631.18	632.81	1.8407	4.3038	182.72	0.68273
160	0.0011014	674.34	675.99	1.9415	4.3322	170.46	0.68058
170	0.0011137	717.8	719.47	2.0407	4.365	159.73	0.67758
180	0.001127	761.61	763.3	2.1386	4.4027	150.26	0.67371
190	0.0011412	805.83	807.54	2.2351	4.4461	141.84	0.66896
198.29	0.0011539	842.83	844.56	2.3143	4.4871	135.54	0.66431
198.29	0.13171	2593.4	2791	6.443	2.9636	15.656	0.039785
200	0.13245	2597.3	2796	6.4536	2.9091	15.733	0.039804
210	0.13664	2618.9	2823.9	6.512	2.6965	16.181	0.040008
220	0.14065	2639.2	2850.2	6.5659	2.5722	16.626	0.040346
230	0.14453	2658.7	2875.5	6.6166	2.4856	17.07	0.040792
240	0.14831	2677.5	2900	6.6649	2.4201	17.511	0.04133
250	0.15201	2695.9	2923.9	6.7111	2.3685	17.95	0.041944
260	0.15565	2713.9	2947.4	6.7555	2.3272	18.389	0.042625
270	0.15923	2731.6	2970.5	6.7984	2.2939	18.825	0.043364
280	0.16276	2749.1	2993.3	6.84	2.2667	19.261	0.044154
290	0.16625	2766.5	3015.8	6.8804	2.2446	19.696	0.044989
300	0.16971	2783.6	3038.2	6.9198	2.2266	20.129	0.045864
320	0.17653	2817.6	3082.4	6.9957	2.2	20.993	0.047717
340	0.18325	2851.4	3126.2	7.0683	2.1828	21.853	0.049686
360	0.1899	2884.9	3169.8	7.1382	2.1722	22.71	0.051752
380	0.19649	2918.4	3213.2	7.2057	2.1665	23.562	0.053898
400	0.20302	2951.9	3256.5	7.271	2.1645	24.411	0.056113
420	0.20951	2985.5	3299.8	7.3343	2.1653	25.256	0.058388
440	0.21597	3019.1	3343.1	7.396	2.1683	26.097	0.060716
460	0.22239	3052.9	3386.5	7.456	2.1731	26.934	0.063091
480	0.22879	3086.9	3430	7.5146	2.1793	27.766	0.06551
500	0.23516	3120.9	3473.7	7.5718	2.1867	28.594	0.067968
520	0.24152	3155.2	3517.5	7.6277	2.1951	29.417	0.070463
540	0.24785	3189.7	3561.5	7.6825	2.2042	30.236	0.072991
560	0.25418	3224.4	3605.7	7.7362	2.2141	31.05	0.075551
580	0.26048	3259.3	3650.1	7.7888	2.2245	31.86	0.07814
600	0.26678	3294.5	3694.7	7.8405	2.2354	32.664	0.080756
620	0.27307	3329.9	3739.5	7.8912	2.2467	33.464	0.083396
640	0.27934	3365.5	3784.5	7.9411	2.2584	34.259	0.086059
660	0.28561	3401.4	3829.8	7.9902	2.2704	35.048	0.088743
680	0.29187	3437.6	3875.4	8.0385	2.2826	35.833	0.091447
700	0.29812	3473.9	3921.1	8.086	2.295	36.613	0.094169
720	0.30436	3510.6	3967.2	8.1328	2.3076	37.388	0.096909
740	0.3106	3547.5	4013.4	8.1789	2.3203	38.157	0.099665
760	0.31684	3584.7	4060	8.2244	2.3331	38.922	0.10244
780	0.32306	3622.2	4106.8	8.2693	2.346	39.682	0.10522
800	0.32929	3659.9	4153.8	8.3135	2.359	40.436	0.10802

Superheated steam / Subcooled water: Pressure 20 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099939	41.97	43.969	0.15091	4.188	1303.8	0.58097
20	0.0010009	83.791	85.793	0.29607	4.1782	1000.8	0.59933
30	0.0010035	125.55	127.55	0.43615	4.1747	797.17	0.61636
40	0.001007	167.28	169.3	0.57163	4.1748	653.13	0.63149
50	0.0010113	209.03	211.06	0.70289	4.177	547.18	0.64448
60	0.0010162	250.81	252.84	0.83024	4.1808	466.82	0.65529
70	0.0010219	292.63	294.68	0.95396	4.1859	404.37	0.66406
80	0.0010281	334.51	336.57	1.0743	4.1926	354.85	0.67098
90	0.001035	376.46	378.53	1.1915	4.201	314.92	0.67627
100	0.0010425	418.51	420.59	1.3057	4.2113	282.25	0.68013
110	0.0010506	460.67	462.77	1.4173	4.2239	255.19	0.68275
120	0.0010593	502.96	505.08	1.5263	4.2389	232.53	0.68426
130	0.0010687	545.42	547.55	1.633	4.2568	213.34	0.68477
140	0.0010787	588.07	590.22	1.7375	4.2777	196.96	0.68436
150	0.0010895	630.94	633.12	1.8401	4.3022	182.85	0.68307
160	0.001101	674.08	676.28	1.9409	4.3304	170.59	0.68093
170	0.0011133	717.52	719.74	2.0401	4.363	159.85	0.67795
180	0.0011266	761.3	763.56	2.1379	4.4005	150.38	0.6741
190	0.0011408	805.49	807.77	2.2344	4.4436	141.97	0.66937
200	0.0011561	850.14	852.45	2.3298	4.4932	134.43	0.6637
210	0.0011726	895.32	897.66	2.4244	4.5506	127.63	0.65705
212.38	0.0011767	906.14	908.5	2.4468	4.5655	126.1	0.65532
212.38	0.099585	2599.1	2798.3	6.339	3.191	16.144	0.042572
220	0.10218	2617.3	2821.6	6.3867	2.9537	16.496	0.042581
230	0.10541	2639.4	2850.2	6.444	2.7698	16.953	0.042748
240	0.1085	2660.2	2877.2	6.4973	2.6482	17.406	0.043058
250	0.1115	2680.2	2903.2	6.5475	2.5584	17.856	0.043484
260	0.11441	2699.6	2928.5	6.5952	2.4884	18.304	0.044007
270	0.11726	2718.5	2953.1	6.6409	2.4326	18.75	0.044612
280	0.12005	2737	2977.1	6.6849	2.3875	19.193	0.045288
290	0.1228	2755.2	3000.8	6.7273	2.3506	19.635	0.046025
300	0.12551	2773.2	3024.2	6.7684	2.3203	20.075	0.046815
320	0.13082	2808.5	3070.1	6.8472	2.2749	20.951	0.04853
340	0.13603	2843.2	3115.3	6.9221	2.2439	21.821	0.050394
360	0.14115	2877.6	3159.9	6.9937	2.2231	22.685	0.052378
380	0.14621	2911.8	3204.2	7.0627	2.2095	23.545	0.05446
400	0.15121	2945.9	3248.3	7.1292	2.2013	24.4	0.056624
420	0.15617	2980	3292.3	7.1935	2.1972	25.25	0.058857
440	0.16109	3014.1	3336.3	7.256	2.1962	26.096	0.061152
460	0.16598	3048.2	3380.2	7.3168	2.1977	26.936	0.0635
480	0.17085	3082.5	3424.2	7.376	2.2011	27.772	0.065897
500	0.17568	3116.9	3468.2	7.4337	2.2062	28.603	0.068337
520	0.1805	3151.4	3512.4	7.4901	2.2125	29.429	0.070817
540	0.1853	3186.1	3556.7	7.5453	2.22	30.25	0.073334
560	0.19009	3221.1	3601.2	7.5994	2.2284	31.066	0.075885
580	0.19486	3256.2	3645.9	7.6523	2.2375	31.877	0.078466
600	0.19961	3291.5	3690.7	7.7043	2.2473	32.683	0.081075
620	0.20436	3327.1	3735.8	7.7553	2.2576	33.483	0.08371
640	0.2091	3362.8	3781	7.8054	2.2684	34.279	0.086368
660	0.21383	3398.9	3826.5	7.8547	2.2796	35.069	0.089047
680	0.21855	3435.1	3872.2	7.9032	2.2911	35.855	0.091745
700	0.22326	3471.6	3918.2	7.9509	2.3029	36.635	0.094462
720	0.22797	3508.4	3964.3	7.9978	2.3149	37.41	0.097196
740	0.23267	3545.4	4010.8	8.0441	2.3271	38.18	0.099946
760	0.23737	3582.7	4057.4	8.0897	2.3395	38.945	0.10271
780	0.24206	3620.2	4104.3	8.1347	2.352	39.704	0.10549
800	0.24674	3658	4151.5	8.179	2.3645	40.459	0.10828

Superheated steam / Subcooled water: Pressure 25 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099915	41.957	44.455	0.15086	4.1861	1303.3	0.58121
20	0.0010007	83.76	86.262	0.29596	4.1766	1000.6	0.59956
30	0.0010033	125.5	128.01	0.43599	4.1734	797.13	0.61658
40	0.0010068	167.22	169.74	0.57143	4.1735	653.17	0.63172
50	0.001011	208.96	211.49	0.70266	4.1758	547.27	0.64471
60	0.001016	250.72	253.26	0.82998	4.1797	466.93	0.65553
70	0.0010216	292.53	295.08	0.95366	4.1849	404.49	0.66431
80	0.0010279	334.39	336.96	1.074	4.1915	354.98	0.67123
90	0.0010348	376.33	378.92	1.1911	4.1999	315.05	0.67653
100	0.0010422	418.36	420.97	1.3053	4.2102	282.38	0.6804
110	0.0010503	460.51	463.13	1.4168	4.2227	255.33	0.68303
120	0.001059	502.78	505.43	1.5258	4.2377	232.66	0.68455
130	0.0010684	545.22	547.89	1.6325	4.2554	213.47	0.68508
140	0.0010784	587.85	590.55	1.737	4.2763	197.09	0.68468
150	0.0010891	630.71	633.43	1.8395	4.3005	182.97	0.68341
160	0.0011006	673.82	676.57	1.9403	4.3286	170.71	0.68129
170	0.0011129	717.24	720.02	2.0395	4.361	159.98	0.67832
180	0.0011261	760.99	763.81	2.1372	4.3983	150.51	0.67449
190	0.0011403	805.15	808	2.2337	4.4411	142.09	0.66978
200	0.0011556	849.76	852.65	2.329	4.4903	134.55	0.66414
210	0.0011721	894.9	897.83	2.4235	4.5472	127.75	0.65752
220	0.0011899	940.65	943.63	2.5173	4.6132	121.56	0.64983
223.95	0.0011974	958.91	961.91	2.5543	4.6422	119.26	0.64648
223.95	0.079949	2602.1	2801.9	6.2558	3.405	16.55	0.045025
230	0.081702	2617.5	2821.8	6.2955	3.1755	16.835	0.044934
240	0.084445	2641.2	2852.3	6.3555	2.9418	17.302	0.04496
250	0.087053	2663.3	2880.9	6.4107	2.7903	17.764	0.045159
260	0.089562	2684.3	2908.2	6.4625	2.6795	18.221	0.045496
270	0.091992	2704.6	2934.6	6.5114	2.5937	18.676	0.045947
280	0.094358	2724.3	2960.1	6.5581	2.5254	19.128	0.046493
290	0.09667	2743.4	2985.1	6.6028	2.4701	19.577	0.047119
300	0.098937	2762.2	3009.6	6.6459	2.4248	20.023	0.047815
320	0.10336	2799	3057.4	6.7278	2.3567	20.91	0.049381
340	0.10767	2834.8	3104	6.8052	2.3098	21.79	0.051131
360	0.11188	2870.1	3149.8	6.8788	2.2772	22.663	0.053027
380	0.11603	2905.1	3195.1	6.9492	2.2549	23.53	0.055041
400	0.12012	2939.8	3240.1	7.017	2.2398	24.391	0.05715
420	0.12416	2974.4	3284.8	7.0824	2.2303	25.246	0.05934
440	0.12816	3008.9	3329.3	7.1458	2.225	26.096	0.0616
460	0.13213	3043.5	3373.8	7.2073	2.2229	26.94	0.063919
480	0.13607	3078.1	3418.3	7.2671	2.2234	27.779	0.066293
500	0.13999	3112.8	3462.7	7.3254	2.226	28.613	0.068715
520	0.14389	3147.6	3507.3	7.3823	2.2303	29.441	0.07118
540	0.14777	3182.6	3552	7.4379	2.236	30.264	0.073685
560	0.15163	3217.7	3596.8	7.4923	2.2429	31.082	0.076226
580	0.15548	3253	3641.7	7.5456	2.2507	31.895	0.078799
600	0.15931	3288.5	3686.8	7.5979	2.2593	32.702	0.081401
620	0.16314	3324.2	3732.1	7.6491	2.2686	33.504	0.08403
640	0.16695	3360.2	3777.5	7.6995	2.2785	34.3	0.086683
660	0.17076	3396.3	3823.2	7.749	2.2889	35.091	0.089356
680	0.17456	3432.7	3869.1	7.7976	2.2997	35.877	0.09205
700	0.17835	3469.3	3915.2	7.8455	2.3109	36.658	0.094761
720	0.18213	3506.2	3961.5	7.8926	2.3223	37.433	0.097489
740	0.18591	3543.3	4008.1	7.939	2.334	38.203	0.10023
760	0.18968	3580.7	4054.9	7.9848	2.3459	38.968	0.10299
780	0.19345	3618.3	4101.9	8.0299	2.358	39.727	0.10576
800	0.19721	3656.2	4149.2	8.0743	2.3701	40.482	0.10855

Superheated steam / Subcooled water: Pressure 30 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099892	41.945	44.941	0.15081	4.1843	1302.8	0.58145
20	0.0010005	83.73	86.732	0.29586	4.1751	1000.4	0.59979
30	0.0010031	125.45	128.46	0.43584	4.172	797.08	0.61681
40	0.0010066	167.16	170.18	0.57124	4.1723	653.21	0.63195
50	0.0010108	208.88	211.92	0.70243	4.1747	547.35	0.64494
60	0.0010158	250.63	253.68	0.82971	4.1786	467.05	0.65577
70	0.0010214	292.43	295.49	0.95336	4.1838	404.62	0.66455
80	0.0010277	334.28	337.36	1.0736	4.1905	355.11	0.67149
90	0.0010345	376.2	379.31	1.1908	4.1988	315.18	0.6768
100	0.001042	418.22	421.34	1.305	4.209	282.52	0.68068
110	0.0010501	460.35	463.5	1.4164	4.2215	255.46	0.68331
120	0.0010588	502.61	505.78	1.5254	4.2364	232.79	0.68485
130	0.0010681	545.03	548.23	1.632	4.2541	213.6	0.68539
140	0.0010781	587.64	590.87	1.7365	4.2748	197.22	0.685
150	0.0010888	630.47	633.74	1.839	4.299	183.1	0.68375
160	0.0011003	673.57	676.87	1.9397	4.3269	170.84	0.68164
170	0.0011125	716.95	720.29	2.0388	4.3591	160.1	0.67869
180	0.0011257	760.69	764.06	2.1365	4.3961	150.63	0.67488
190	0.0011398	804.81	808.23	2.2329	4.4386	142.22	0.67019
200	0.0011551	849.39	852.86	2.3282	4.4875	134.68	0.66458
210	0.0011715	894.49	898.01	2.4227	4.5438	127.88	0.65798
220	0.0011893	940.2	943.76	2.5164	4.6093	121.69	0.65033
230	0.0012087	986.6	990.23	2.6097	4.6857	116.01	0.64152
233.85	0.0012167	1004.7	1008.3	2.6455	4.7186	113.94	0.6378
233.85	0.066664	2603.2	2803.2	6.1856	3.6119	16.903	0.047263
240	0.06823	2619.8	2824.5	6.2274	3.3487	17.197	0.047083
250	0.070627	2644.7	2856.5	6.2893	3.0831	17.672	0.046998
260	0.072895	2667.8	2886.4	6.3459	2.9094	18.14	0.047112
270	0.075066	2689.7	2914.9	6.3987	2.7822	18.604	0.047382
280	0.077162	2710.7	2942.2	6.4486	2.6836	19.064	0.047779
290	0.079196	2731	2968.6	6.4959	2.6051	19.52	0.048281
300	0.081179	2750.8	2994.3	6.5412	2.5414	19.973	0.048873
320	0.085022	2789.1	3044.2	6.6266	2.4463	20.872	0.050272
340	0.088737	2826.2	3092.4	6.7066	2.3808	21.761	0.051899
360	0.092355	2862.4	3139.5	6.7823	2.3349	22.642	0.053702
380	0.095897	2898.2	3185.9	6.8544	2.3027	23.516	0.055642
400	0.099379	2933.5	3231.7	6.9234	2.2801	24.383	0.057694
420	0.10281	2968.7	3277.1	6.99	2.2648	25.243	0.059838
440	0.1062	3003.7	3322.3	7.0542	2.2548	26.097	0.06206
460	0.10956	3038.7	3367.3	7.1165	2.2489	26.945	0.06435
480	0.11289	3073.6	3412.3	7.177	2.2464	27.788	0.066699
500	0.1162	3108.6	3457.2	7.2359	2.2464	28.624	0.069101
520	0.11948	3143.7	3502.2	7.2933	2.2485	29.455	0.071551
540	0.12274	3178.9	3547.2	7.3493	2.2523	30.28	0.074043
560	0.12599	3214.3	3592.3	7.4041	2.2576	31.1	0.076574
580	0.12922	3249.8	3637.5	7.4577	2.264	31.913	0.079139
600	0.13245	3285.5	3682.8	7.5103	2.2715	32.722	0.081734
620	0.13566	3321.4	3728.3	7.5618	2.2797	33.525	0.084357
640	0.13886	3357.5	3774	7.6124	2.2887	34.322	0.087004
660	0.14205	3393.8	3819.9	7.6621	2.2983	35.114	0.089672
680	0.14523	3430.3	3866	7.7109	2.3084	35.9	0.092361
700	0.14841	3467	3912.2	7.759	2.3189	36.681	0.095066
720	0.15157	3504	3958.7	7.8062	2.3298	37.456	0.097788
740	0.15474	3541.2	4005.4	7.8528	2.3409	38.226	0.10052
760	0.1579	3578.7	4052.4	7.8987	2.3524	38.991	0.10328
780	0.16105	3616.4	4099.5	7.9439	2.364	39.751	0.10604
800	0.1642	3654.3	4146.9	7.9885	2.3758	40.505	0.10881

Superheated steam / Subcooled water: Pressure 40 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099844	41.919	45.913	0.15072	4.1806	1301.7	0.58194
20	0.001	83.67	87.67	0.29564	4.172	999.98	0.60025
30	0.0010026	125.36	129.37	0.43553	4.1694	797	0.61726
40	0.0010061	167.04	171.07	0.57085	4.1699	653.3	0.6324
50	0.0010104	208.74	212.78	0.70196	4.1724	547.53	0.6454
60	0.0010153	250.46	254.52	0.82918	4.1764	467.27	0.65624
70	0.001021	292.23	296.31	0.95277	4.1816	404.87	0.66504
80	0.0010272	334.05	338.16	1.073	4.1883	355.37	0.672
90	0.001034	375.95	380.08	1.19	4.1966	315.45	0.67732
100	0.0010415	417.93	422.1	1.3042	4.2068	282.79	0.68122
110	0.0010495	460.03	464.22	1.4156	4.2191	255.72	0.68388
120	0.0010582	502.25	506.49	1.5245	4.2339	233.05	0.68544
130	0.0010675	544.64	548.91	1.631	4.2514	213.86	0.686
140	0.0010775	587.22	591.53	1.7354	4.2719	197.47	0.68565
150	0.0010881	630.01	634.36	1.8379	4.2958	183.35	0.68442
160	0.0010996	673.06	677.45	1.9385	4.3234	171.09	0.68235
170	0.0011118	716.4	720.84	2.0376	4.3552	160.35	0.67943
180	0.0011249	760.07	764.57	2.1352	4.3917	150.88	0.67566
190	0.0011389	804.14	808.69	2.2315	4.4336	142.46	0.67101
200	0.0011541	848.65	853.27	2.3267	4.4817	134.93	0.66545
210	0.0011704	893.67	898.35	2.421	4.5372	128.13	0.65891
220	0.0011881	939.29	944.04	2.5146	4.6015	121.95	0.65133
230	0.0012073	985.59	990.42	2.6077	4.6764	116.28	0.6426
240	0.0012284	1032.7	1037.6	2.7005	4.7646	111.03	0.63261
250	0.0012517	1080.8	1085.8	2.7935	4.8698	106.12	0.62122
250.35	0.0012526	1082.5	1087.5	2.7968	4.8739	105.95	0.62079
250.35	0.049776	2601.7	2800.8	6.0696	4.0203	17.508	0.051357
260	0.051777	2630	2837.1	6.1383	3.5582	17.982	0.050852
270	0.053693	2656.4	2871.2	6.2016	3.2749	18.466	0.050639
280	0.055497	2680.9	2902.9	6.2595	3.0795	18.943	0.050656
290	0.057217	2704.1	2933	6.3133	2.933	19.414	0.050851
300	0.05887	2726.2	2961.7	6.3639	2.8185	19.881	0.051189
320	0.062021	2768.2	3016.3	6.4576	2.6523	20.802	0.052198
340	0.065019	2808.1	3068.1	6.5435	2.5401	21.71	0.053543
360	0.067903	2846.5	3118.1	6.6238	2.4619	22.607	0.055134
380	0.070701	2884	3166.8	6.6994	2.4064	23.494	0.056912
400	0.073431	2920.7	3214.5	6.7714	2.3665	24.372	0.058837
420	0.076108	2957.1	3261.5	6.8402	2.3378	25.242	0.06088
440	0.078741	2993.1	3308	6.9064	2.3174	26.105	0.063022
460	0.081337	3028.9	3354.2	6.9703	2.3033	26.96	0.065246
480	0.083902	3064.6	3400.2	7.0321	2.294	27.808	0.067543
500	0.086442	3100.3	3446	7.0922	2.2884	28.65	0.069903
520	0.088959	3135.9	3491.8	7.1506	2.2859	29.485	0.072319
540	0.091457	3171.6	3537.5	7.2075	2.2858	30.314	0.074784
560	0.093938	3207.5	3583.2	7.2631	2.2877	31.137	0.077293
580	0.096405	3243.4	3629	7.3174	2.2913	31.954	0.07984
600	0.098859	3279.4	3674.9	7.3705	2.2963	32.764	0.082421
620	0.1013	3315.6	3720.9	7.4226	2.3024	33.569	0.085031
640	0.10373	3352	3767	7.4737	2.3094	34.368	0.087666
660	0.10616	3388.6	3813.2	7.5238	2.3173	35.16	0.090323
680	0.10857	3425.4	3859.7	7.573	2.3259	35.948	0.093
700	0.11098	3462.4	3906.3	7.6214	2.3351	36.729	0.095695
720	0.11338	3499.6	3953.1	7.669	2.3448	37.505	0.098404
740	0.11577	3537	4000.1	7.7159	2.3549	38.275	0.10113
760	0.11816	3574.6	4047.3	7.762	2.3654	39.04	0.10386
780	0.12054	3612.5	4094.7	7.8074	2.3761	39.799	0.10661
800	0.12292	3650.6	4142.3	7.8523	2.3871	40.553	0.10937

Superheated steam / Subcooled water: Pressure 50 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099797	41.893	46.883	0.15062	4.177	1300.7	0.58243
20	0.00099956	83.609	88.607	0.29543	4.169	999.58	0.60071
30	0.0010022	125.27	130.28	0.43522	4.1667	796.92	0.61771
40	0.0010057	166.92	171.95	0.57046	4.1675	653.39	0.63286
50	0.0010099	208.59	213.64	0.7015	4.1702	547.71	0.64587
60	0.0010149	250.29	255.36	0.82865	4.1742	467.5	0.65672
70	0.0010205	292.03	297.13	0.95218	4.1795	405.12	0.66554
80	0.0010267	333.82	338.95	1.0723	4.1862	355.64	0.67251
90	0.0010336	375.69	380.86	1.1893	4.1944	315.72	0.67785
100	0.001041	417.64	422.85	1.3034	4.2045	283.05	0.68177
110	0.001049	459.71	464.95	1.4147	4.2168	255.99	0.68445
120	0.0010576	501.9	507.19	1.5236	4.2314	233.31	0.68603
130	0.0010669	544.26	549.59	1.6301	4.2487	214.12	0.68662
140	0.0010769	586.79	592.18	1.7344	4.269	197.73	0.68629
150	0.0010875	629.55	634.98	1.8368	4.2926	183.6	0.68509
160	0.0010988	672.55	678.04	1.9374	4.3199	171.34	0.68305
170	0.001111	715.84	721.4	2.0363	4.3513	160.6	0.68017
180	0.001124	759.46	765.08	2.1338	4.3874	151.13	0.67644
190	0.001138	803.47	809.16	2.23	4.4287	142.71	0.67183
200	0.0011531	847.91	853.68	2.3251	4.4761	135.18	0.66632
210	0.0011693	892.86	898.71	2.4193	4.5307	128.38	0.65983
220	0.0011868	938.39	944.32	2.5127	4.5938	122.2	0.65231
230	0.0012059	984.59	990.62	2.6057	4.6673	116.54	0.64367
240	0.0012268	1031.6	1037.7	2.6983	4.7536	111.3	0.63378
250	0.0012499	1079.5	1085.7	2.791	4.8562	106.4	0.62251
260	0.0012755	1128.5	1134.9	2.8841	4.9804	101.77	0.60968
263.94	0.0012864	1148.2	1154.6	2.921	5.0368	100.01	0.60415
263.94	0.039446	2597	2794.2	5.9737	4.438	18.032	0.055203
270	0.040567	2617	2819.8	6.0211	4.0469	18.337	0.054646
280	0.042274	2646.7	2858.1	6.0909	3.638	18.832	0.054087
290	0.043856	2673.8	2893	6.1536	3.3687	19.319	0.053849
300	0.045346	2699	2925.7	6.211	3.1722	19.799	0.053847
320	0.04813	2745.6	2986.2	6.3149	2.9016	20.743	0.054357
340	0.050724	2788.8	3042.4	6.408	2.7261	21.669	0.055355
360	0.053186	2829.7	3095.6	6.4935	2.6063	22.581	0.056694
380	0.055549	2869.1	3146.9	6.5732	2.5218	23.48	0.058283
400	0.057837	2907.5	3196.7	6.6483	2.461	24.369	0.060062
420	0.060066	2945.1	3245.4	6.7196	2.4168	25.248	0.061991
440	0.062248	2982.2	3293.4	6.7879	2.3844	26.118	0.064041
460	0.06439	3018.9	3340.9	6.8535	2.3609	26.98	0.066192
480	0.0665	3055.4	3387.9	6.9168	2.344	27.834	0.06843
500	0.068583	3091.7	3434.7	6.9781	2.3323	28.681	0.070743
520	0.070642	3128	3481.2	7.0375	2.3247	29.52	0.073122
540	0.072681	3164.3	3527.7	7.0954	2.3204	30.352	0.075557
560	0.074703	3200.5	3574.1	7.1517	2.3188	31.178	0.078042
580	0.07671	3236.9	3620.4	7.2067	2.3193	31.997	0.08057
600	0.078704	3273.3	3666.8	7.2605	2.3216	32.81	0.083135
620	0.080685	3309.9	3713.3	7.3131	2.3254	33.616	0.085731
640	0.082657	3346.6	3759.9	7.3647	2.3305	34.416	0.088354
660	0.084619	3383.4	3806.5	7.4152	2.3367	35.21	0.091
680	0.086572	3420.5	3853.3	7.4649	2.3437	35.998	0.093665
700	0.088518	3457.7	3900.3	7.5136	2.3515	36.78	0.096347
720	0.090457	3495.1	3947.4	7.5615	2.36	37.556	0.099044
740	0.09239	3532.7	3994.7	7.6087	2.369	38.326	0.10175
760	0.094318	3570.6	4042.2	7.6551	2.3785	39.091	0.10447
780	0.09624	3608.6	4089.8	7.7008	2.3884	39.85	0.10721
800	0.098158	3646.9	4137.7	7.7458	2.3986	40.603	0.10995

Superheated steam / Subcooled water: Pressure 60 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0009975	41.868	47.853	0.15052	4.1733	1299.6	0.58291
20	0.00099911	83.549	89.543	0.29522	4.166	999.19	0.60117
30	0.0010017	125.18	131.19	0.43492	4.1641	796.85	0.61817
40	0.0010052	166.8	172.84	0.57007	4.1651	653.48	0.63331
50	0.0010095	208.44	214.5	0.70104	4.168	547.89	0.64633
60	0.0010144	250.11	256.2	0.82812	4.1721	467.73	0.6572
70	0.00102	291.82	297.95	0.95159	4.1774	405.37	0.66603
80	0.0010263	333.59	339.75	1.0717	4.184	355.9	0.67301
90	0.0010331	375.43	381.63	1.1886	4.1923	315.99	0.67837
100	0.0010405	417.36	423.6	1.3026	4.2023	283.32	0.68232
110	0.0010485	459.39	465.68	1.4139	4.2144	256.25	0.68502
120	0.0010571	501.56	507.9	1.5227	4.2289	233.57	0.68662
130	0.0010663	543.87	550.27	1.6291	4.2461	214.38	0.68724
140	0.0010762	586.37	592.83	1.7334	4.2662	197.98	0.68694
150	0.0010868	629.08	635.61	1.8357	4.2895	183.85	0.68577
160	0.0010981	672.04	678.63	1.9362	4.3165	171.58	0.68376
170	0.0011102	715.29	721.95	2.0351	4.3475	160.84	0.68091
180	0.0011232	758.86	765.6	2.1325	4.3831	151.37	0.67721
190	0.0011371	802.81	809.63	2.2286	4.4238	142.96	0.67265
200	0.0011521	847.18	854.09	2.3235	4.4706	135.42	0.66718
210	0.0011682	892.05	899.06	2.4176	4.5243	128.63	0.66075
220	0.0011856	937.49	944.61	2.5109	4.5863	122.46	0.6533
230	0.0012046	983.6	990.82	2.6037	4.6584	116.8	0.64473
240	0.0012253	1030.5	1037.8	2.6961	4.7428	111.57	0.63493
250	0.0012481	1078.2	1085.7	2.7886	4.843	106.68	0.62378
260	0.0012734	1127.1	1134.7	2.8814	4.9638	102.07	0.6111
270	0.0013018	1177.3	1185.1	2.975	5.1124	97.652	0.5967
275.58	0.0013193	1206	1213.9	3.0278	5.2116	95.248	0.58784
275.58	0.032448	2589.9	2784.6	5.8901	4.8794	18.51	0.059006
280	0.033199	2606.1	2805.3	5.9277	4.5171	18.735	0.0584
290	0.034762	2639	2847.5	6.0034	3.9813	19.237	0.057476
300	0.036189	2668.4	2885.5	6.0703	3.6388	19.731	0.056981
320	0.03878	2720.9	2953.6	6.1871	3.2077	20.696	0.056817
340	0.041135	2768.1	3014.9	6.2888	2.9449	21.639	0.057376
360	0.043333	2812	3072	6.3804	2.7711	22.564	0.058408
380	0.045418	2853.6	3126.1	6.4646	2.6507	23.475	0.059771
400	0.047419	2893.7	3178.2	6.5432	2.5647	24.374	0.06138
420	0.049355	2932.8	3228.9	6.6173	2.5022	25.261	0.063177
440	0.05124	2971	3278.4	6.6878	2.456	26.138	0.065123
460	0.053083	3008.7	3327.2	6.7552	2.4218	27.006	0.067192
480	0.054891	3046	3375.4	6.8201	2.3966	27.865	0.069364
500	0.056671	3083.1	3423.1	6.8826	2.3782	28.716	0.071625
520	0.058426	3120	3470.5	6.9432	2.3651	29.559	0.073961
540	0.060161	3156.8	3517.7	7.002	2.3562	30.395	0.076364
560	0.061877	3193.5	3564.8	7.0591	2.3508	31.223	0.078823
580	0.063578	3230.3	3611.8	7.1149	2.348	32.044	0.081329
600	0.065265	3267.2	3658.7	7.1693	2.3476	32.859	0.083877
620	0.066941	3304.1	3705.7	7.2224	2.349	33.667	0.086458
640	0.068605	3341.1	3752.7	7.2745	2.352	34.468	0.089068
660	0.07026	3378.2	3799.8	7.3255	2.3563	35.262	0.091702
680	0.071907	3415.5	3847	7.3755	2.3618	36.051	0.094355
700	0.073545	3453	3894.3	7.4246	2.3682	36.833	0.097024
720	0.075177	3490.6	3941.7	7.4729	2.3754	37.609	0.099708
740	0.076803	3528.5	3989.3	7.5203	2.3833	38.38	0.1024
760	0.078423	3566.5	4037	7.567	2.3917	39.144	0.10511
780	0.080038	3604.7	4085	7.6129	2.4007	39.903	0.10782
800	0.081648	3643.2	4133.1	7.6582	2.4101	40.656	0.11055

Superheated steam / Subcooled water: Pressure 70 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099703	41.841	48.821	0.15041	4.1697	1298.6	0.5834
20	0.00099866	83.488	90.479	0.295	4.163	998.81	0.60163
30	0.0010013	125.09	132.1	0.43461	4.1615	796.77	0.61862
40	0.0010048	166.68	173.72	0.56968	4.1628	653.57	0.63377
50	0.0010091	208.3	215.36	0.70058	4.1657	548.07	0.6468
60	0.001014	249.94	257.04	0.8276	4.1699	467.96	0.65768
70	0.0010196	291.63	298.76	0.951	4.1753	405.63	0.66652
80	0.0010258	333.37	340.55	1.071	4.1819	356.16	0.67352
90	0.0010326	375.18	382.41	1.1879	4.1901	316.25	0.6789
100	0.00104	417.08	424.36	1.3019	4.2001	283.59	0.68286
110	0.001048	459.08	466.41	1.4131	4.2121	256.52	0.68559
120	0.0010566	501.21	508.61	1.5218	4.2265	233.84	0.68721
130	0.0010658	543.49	550.95	1.6282	4.2435	214.64	0.68785
140	0.0010756	585.95	593.48	1.7324	4.2633	198.24	0.68758
150	0.0010862	628.63	636.23	1.8346	4.2864	184.11	0.68644
160	0.0010974	671.54	679.22	1.935	4.3131	171.83	0.68446
170	0.0011095	714.74	722.51	2.0338	4.3437	161.09	0.68164
180	0.0011224	758.26	766.11	2.1311	4.3789	151.62	0.67799
190	0.0011362	802.15	810.1	2.2271	4.4191	143.2	0.67347
200	0.0011511	846.46	854.51	2.322	4.4651	135.67	0.66804
210	0.0011671	891.25	899.42	2.4159	4.518	128.88	0.66167
220	0.0011844	936.61	944.9	2.5091	4.5789	122.71	0.65428
230	0.0012032	982.61	991.04	2.6017	4.6496	117.06	0.64579
240	0.0012237	1029.4	1037.9	2.694	4.7323	111.83	0.63608
250	0.0012463	1077	1085.7	2.7862	4.8301	106.96	0.62504
260	0.0012713	1125.7	1134.6	2.8788	4.9476	102.36	0.6125
270	0.0012993	1175.7	1184.8	2.972	5.0916	97.963	0.59828
280	0.0013311	1227.2	1236.6	3.0665	5.2728	93.702	0.5822
285.83	0.0013519	1258.2	1267.7	3.1224	5.4025	91.249	0.57188
285.83	0.027378	2581	2772.6	5.8148	5.3566	18.96	0.062915
290	0.028043	2597.8	2794.1	5.8529	4.9397	19.174	0.062121
300	0.029492	2633.5	2839.9	5.9337	4.2898	19.679	0.060815
320	0.032012	2693.8	2917.9	6.0675	3.5915	20.663	0.059678
340	0.034229	2746	2985.6	6.1797	3.2048	21.621	0.059658
360	0.036257	2793.2	3047	6.2784	2.9601	22.559	0.060305
380	0.038155	2837.4	3104.5	6.3677	2.7949	23.48	0.061397
400	0.039958	2879.5	3159.2	6.4502	2.6786	24.387	0.062804
420	0.04169	2920	3211.8	6.5273	2.5946	25.282	0.064447
440	0.043366	2959.5	3263.1	6.6002	2.5326	26.165	0.066274
460	0.044997	2998.3	3313.3	6.6696	2.4865	27.038	0.068249
480	0.046592	3036.5	3362.6	6.736	2.4519	27.902	0.070347
500	0.048157	3074.3	3411.4	6.8	2.4261	28.757	0.072549
520	0.049696	3111.8	3459.7	6.8617	2.407	29.603	0.07484
540	0.051214	3149.2	3507.7	6.9214	2.3933	30.442	0.077206
560	0.052713	3186.5	3555.5	6.9794	2.3837	31.272	0.079636
580	0.054196	3223.7	3603.1	7.0359	2.3775	32.095	0.082119
600	0.055665	3260.9	3650.6	7.091	2.3742	32.911	0.084648
620	0.057121	3298.2	3698.1	7.1447	2.3731	33.72	0.087213
640	0.058567	3335.6	3745.5	7.1973	2.3739	34.522	0.089809
660	0.060003	3373	3793	7.2487	2.3764	35.318	0.092429
680	0.061431	3410.6	3840.6	7.2992	2.3801	36.107	0.095069
700	0.06285	3448.3	3888.2	7.3486	2.3851	36.889	0.097726
720	0.064263	3486.2	3936	7.3972	2.391	37.665	0.1004
740	0.065669	3524.2	3983.9	7.445	2.3977	38.435	0.10308
760	0.06707	3562.4	4031.9	7.4919	2.4051	39.199	0.10577
780	0.068465	3600.8	4080.1	7.5381	2.4132	39.958	0.10846
800	0.069855	3639.5	4128.4	7.5836	2.4217	40.71	0.11117

Superheated steam / Subcooled water: Pressure 80 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099657	41.815	49.788	0.15031	4.1662	1297.6	0.58389
20	0.00099821	83.428	91.414	0.29478	4.1601	998.43	0.60209
30	0.0010009	125	133.01	0.4343	4.1589	796.71	0.61907
40	0.0010044	166.57	174.6	0.56929	4.1604	653.67	0.63422
50	0.0010086	208.15	216.22	0.70012	4.1635	548.25	0.64726
60	0.0010136	249.77	257.88	0.82707	4.1678	468.18	0.65815
70	0.0010191	291.43	299.58	0.95041	4.1732	405.88	0.66701
80	0.0010253	333.14	341.34	1.0704	4.1798	356.43	0.67403
90	0.0010321	374.92	383.18	1.1872	4.188	316.52	0.67943
100	0.0010395	416.79	425.11	1.3011	4.1979	283.86	0.68341
110	0.0010474	458.77	467.15	1.4123	4.2098	256.79	0.68615
120	0.001056	500.86	509.31	1.5209	4.224	234.1	0.6878
130	0.0010652	543.11	551.63	1.6272	4.2409	214.89	0.68847
140	0.001075	585.54	594.14	1.7313	4.2605	198.49	0.68822
150	0.0010855	628.17	636.86	1.8335	4.2834	184.36	0.68711
160	0.0010967	671.04	679.82	1.9339	4.3097	172.08	0.68516
170	0.0011087	714.19	723.06	2.0326	4.34	161.34	0.68238
180	0.0011216	757.66	766.63	2.1298	4.3747	151.86	0.67876
190	0.0011353	801.49	810.57	2.2257	4.4143	143.45	0.67428
200	0.0011501	845.74	854.94	2.3205	4.4597	135.92	0.6689
210	0.001166	890.46	899.79	2.4143	4.5118	129.13	0.66258
220	0.0011832	935.73	945.2	2.5073	4.5717	122.96	0.65525
230	0.0012019	981.64	991.25	2.5997	4.641	117.32	0.64684
240	0.0012222	1028.3	1038.1	2.6919	4.722	112.1	0.63722
250	0.0012446	1075.8	1085.7	2.7839	4.8176	107.23	0.62629
260	0.0012693	1124.3	1134.5	2.8761	4.932	102.65	0.61389
270	0.0012969	1174.1	1184.5	2.969	5.0715	98.269	0.59984
280	0.0013282	1225.4	1236	3.0631	5.2462	94.033	0.58397
290	0.0013643	1278.6	1289.6	3.159	5.4726	89.86	0.56609
295.01	0.0013847	1306.2	1317.3	3.2081	5.6141	87.766	0.55634
295.01	0.023526	2570.5	2758.7	5.745	5.8823	19.397	0.067056
300	0.024279	2592.3	2786.5	5.7937	5.2933	19.651	0.065797
320	0.02684	2663.7	2878.4	5.9515	4.0881	20.649	0.063096
340	0.028992	2722	2953.9	6.0768	3.5177	21.618	0.062276
360	0.030912	2773.3	3020.6	6.1838	3.1785	22.566	0.062428
380	0.032681	2820.4	3081.8	6.279	2.9568	23.496	0.063184
400	0.034344	2864.6	3139.4	6.3658	2.804	24.41	0.06435
420	0.035928	2906.9	3194.3	6.4462	2.6947	25.311	0.065813
440	0.037451	2947.7	3247.3	6.5217	2.6146	26.199	0.067502
460	0.038926	2987.6	3299	6.5931	2.555	27.077	0.06937
480	0.040362	3026.7	3349.6	6.6613	2.5101	27.945	0.071384
500	0.041767	3065.4	3399.5	6.7266	2.4762	28.803	0.07352
520	0.043145	3103.6	3448.7	6.7895	2.4506	29.652	0.075758
540	0.044501	3141.6	3497.6	6.8503	2.4315	30.493	0.078084
560	0.045838	3179.3	3546	6.9092	2.4176	31.325	0.080482
580	0.047158	3217	3594.3	6.9664	2.4078	32.15	0.08294
600	0.048463	3254.7	3642.4	7.0221	2.4014	32.967	0.085448
620	0.049756	3292.3	3690.4	7.0764	2.3976	33.777	0.087996
640	0.051038	3330	3738.3	7.1295	2.3962	34.58	0.090577
660	0.05231	3367.7	3786.2	7.1814	2.3967	35.376	0.093183
680	0.053573	3405.6	3834.2	7.2323	2.3988	36.165	0.095809
700	0.054828	3443.6	3882.2	7.2821	2.4022	36.947	0.098452
720	0.056077	3481.7	3930.3	7.331	2.4067	37.723	0.10111
740	0.057318	3519.9	3978.5	7.3791	2.4123	38.493	0.10377
760	0.058554	3558.3	4026.8	7.4263	2.4186	39.257	0.10645
780	0.059785	3596.9	4075.2	7.4727	2.4257	40.014	0.10913
800	0.061011	3635.7	4123.8	7.5184	2.4334	40.766	0.11181

Superheated steam / Subcooled water: Pressure 90 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0009961	41.789	50.754	0.1502	4.1627	1296.7	0.58438
20	0.00099776	83.368	92.348	0.29457	4.1572	998.06	0.60255
30	0.0010004	124.91	133.91	0.43399	4.1564	796.64	0.61953
40	0.0010039	166.45	175.48	0.5689	4.1581	653.77	0.63468
50	0.0010082	208.01	217.08	0.69966	4.1613	548.44	0.64773
60	0.0010131	249.6	258.71	0.82654	4.1657	468.42	0.65863
70	0.0010187	291.23	300.4	0.94982	4.1711	406.13	0.6675
80	0.0010249	332.92	342.14	1.0697	4.1777	356.69	0.67454
90	0.0010316	374.67	383.96	1.1865	4.1858	316.79	0.67995
100	0.001039	416.51	425.86	1.3003	4.1957	284.12	0.68395
110	0.0010469	458.45	467.88	1.4114	4.2075	257.05	0.68672
120	0.0010555	500.52	510.02	1.52	4.2216	234.36	0.68839
130	0.0010646	542.74	552.32	1.6263	4.2383	215.15	0.68908
140	0.0010744	585.13	594.79	1.7303	4.2577	198.74	0.68886
150	0.0010849	627.72	637.48	1.8324	4.2803	184.61	0.68778
160	0.001096	670.55	680.41	1.9327	4.3064	172.33	0.68586
170	0.001108	713.65	723.62	2.0313	4.3363	161.58	0.68311
180	0.0011208	757.07	767.15	2.1285	4.3705	152.11	0.67953
190	0.0011345	800.84	811.05	2.2243	4.4097	143.69	0.67509
200	0.0011491	845.02	855.37	2.3189	4.4544	136.16	0.66976
210	0.001165	889.67	900.16	2.4126	4.5056	129.38	0.66349
220	0.001182	934.86	945.5	2.5055	4.5645	123.21	0.65623
230	0.0012005	980.68	991.48	2.5978	4.6326	117.57	0.64788
240	0.0012207	1027.2	1038.2	2.6897	4.7119	112.36	0.63835
250	0.0012428	1074.6	1085.8	2.7815	4.8053	107.51	0.62753
260	0.0012673	1123	1134.4	2.8736	4.9167	102.93	0.61526
270	0.0012946	1172.5	1184.2	2.9661	5.0521	98.573	0.60138
280	0.0013254	1223.6	1235.5	3.0598	5.2206	94.36	0.58572
290	0.0013608	1276.5	1288.8	3.1552	5.4373	90.22	0.5681
300	0.0014024	1331.9	1344.5	3.2533	5.7294	86.063	0.54838
303.34	0.0014181	1351.1	1363.9	3.287	5.8521	84.648	0.54129
303.34	0.02049	2558.5	2742.9	5.6791	6.471	19.83	0.071555
320	0.022708	2629.6	2834	5.835	4.7626	20.659	0.067334
340	0.024859	2695.9	2919.7	5.9771	3.9018	21.633	0.065336
360	0.026718	2752.1	2992.6	6.0942	3.433	22.587	0.064829
380	0.028399	2802.5	3058.1	6.1961	3.1396	23.523	0.065162
400	0.02996	2849.2	3118.8	6.2876	2.9423	24.443	0.066035
420	0.031433	2893.3	3176.2	6.3716	2.8033	25.348	0.067284
440	0.032841	2935.6	3231.2	6.4499	2.7025	26.241	0.068813
460	0.034197	2976.7	3284.5	6.5235	2.6276	27.123	0.070558
480	0.035512	3016.8	3336.4	6.5935	2.5712	27.993	0.072476
500	0.036793	3056.3	3387.4	6.6603	2.5284	28.854	0.074538
520	0.038047	3095.2	3437.6	6.7244	2.4958	29.706	0.076719
540	0.039278	3133.8	3487.3	6.7862	2.4711	30.548	0.079
560	0.040488	3172.1	3536.5	6.8461	2.4525	31.382	0.081362
580	0.041682	3210.3	3585.4	6.9041	2.4389	32.208	0.083793
600	0.042861	3248.4	3634.1	6.9605	2.4292	33.026	0.086278
620	0.044027	3286.4	3682.6	7.0154	2.4227	33.837	0.088808
640	0.045181	3324.4	3731	7.069	2.4189	34.64	0.091371
660	0.046326	3362.5	3779.4	7.1214	2.4173	35.436	0.093962
680	0.047461	3400.6	3827.7	7.1726	2.4176	36.226	0.096574
700	0.048589	3438.8	3876.1	7.2229	2.4195	37.008	0.099202
720	0.049709	3477.1	3924.5	7.2721	2.4227	37.784	0.10184
740	0.050823	3515.6	3973	7.3205	2.427	38.553	0.10449
760	0.051931	3554.2	4021.6	7.368	2.4323	39.316	0.10715
780	0.053034	3593	4070.3	7.4147	2.4384	40.073	0.10981
800	0.054132	3632	4119.1	7.4606	2.4452	40.824	0.11248

Superheated steam / Subcooled water: Pressure 100 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099564	41.762	51.719	0.15009	4.1592	1295.7	0.58486
20	0.00099731	83.308	93.281	0.29435	4.1543	997.69	0.60301
30	0.00099998	124.82	134.82	0.43368	4.1538	796.58	0.61998
40	0.0010035	166.33	176.36	0.56851	4.1558	653.87	0.63514
50	0.0010078	207.86	217.94	0.6992	4.1592	548.63	0.64819
60	0.0010127	249.42	259.55	0.82602	4.1636	468.65	0.65911
70	0.0010182	291.03	301.21	0.94923	4.169	406.39	0.66799
80	0.0010244	332.69	342.94	1.0691	4.1757	356.96	0.67505
90	0.0010312	374.42	384.73	1.1858	4.1837	317.06	0.68048
100	0.0010385	416.23	426.62	1.2996	4.1935	284.39	0.6845
110	0.0010464	458.14	468.61	1.4106	4.2052	257.31	0.68729
120	0.0010549	500.18	510.73	1.5191	4.2192	234.62	0.68898
130	0.001064	542.36	553	1.6253	4.2357	215.41	0.6897
140	0.0010738	584.71	595.45	1.7293	4.255	199	0.6895
150	0.0010842	627.27	638.11	1.8313	4.2773	184.86	0.68845
160	0.0010954	670.06	681.01	1.9315	4.3031	172.58	0.68656
170	0.0011072	713.11	724.18	2.0301	4.3326	161.83	0.68385
180	0.00112	756.48	767.68	2.1271	4.3664	152.35	0.6803
190	0.0011336	800.19	811.53	2.2229	4.405	143.93	0.6759
200	0.0011482	844.31	855.8	2.3174	4.4491	136.41	0.67062
210	0.0011639	888.89	900.53	2.411	4.4996	129.62	0.6644
220	0.0011809	934	945.81	2.5037	4.5575	123.46	0.65719
230	0.0011992	979.72	991.71	2.5959	4.6244	117.83	0.64892
240	0.0012192	1026.1	1038.3	2.6876	4.7021	112.62	0.63948
250	0.0012412	1073.4	1085.8	2.7792	4.7934	107.78	0.62876
260	0.0012653	1121.6	1134.3	2.871	4.9019	103.22	0.61662
270	0.0012923	1171	1183.9	2.9633	5.0333	98.873	0.6029
280	0.0013226	1221.8	1235	3.0565	5.196	94.683	0.58744
290	0.0013574	1274.4	1288	3.1514	5.4037	90.573	0.57008
300	0.001398	1329.4	1343.3	3.2488	5.6807	86.46	0.55067
311	0.0014526	1393.5	1408.1	3.3606	6.1237	81.795	0.52683
311	0.01803	2545.2	2725.5	5.616	7.1408	20.267	0.076543
320	0.01927	2590.1	2782.8	5.7133	5.7532	20.703	0.07288
340	0.021487	2667.3	2882.1	5.8782	4.3858	21.672	0.068997
360	0.023325	2729.4	2962.7	6.0075	3.7331	22.626	0.067581
380	0.02495	2783.7	3033.2	6.1172	3.347	23.564	0.06737
400	0.026436	2833.1	3097.4	6.2141	3.0953	24.487	0.067882
420	0.027826	2879.3	3157.5	6.302	2.9214	25.395	0.068876
440	0.029144	2923.2	3214.6	6.3833	2.7966	26.291	0.070216
460	0.030407	2965.5	3269.6	6.4593	2.7046	27.175	0.071819
480	0.031626	3006.7	3323	6.5311	2.6356	28.048	0.07363
500	0.032811	3047	3375.1	6.5995	2.583	28.911	0.075608
520	0.033966	3086.7	3426.4	6.6649	2.5428	29.764	0.077724
540	0.035097	3125.9	3476.9	6.7278	2.512	30.608	0.079955
560	0.036207	3164.8	3526.9	6.7886	2.4885	31.443	0.082278
580	0.0373	3203.5	3576.5	6.8474	2.4708	32.27	0.084678
600	0.038378	3242	3625.8	6.9045	2.4576	33.089	0.087139
620	0.039442	3280.4	3674.8	6.96	2.4483	33.9	0.089648
640	0.040495	3318.8	3723.7	7.0142	2.442	34.704	0.092194
660	0.041538	3357.1	3772.5	7.067	2.4383	35.5	0.094769
680	0.042572	3395.5	3821.3	7.1187	2.4368	36.289	0.097365
700	0.043597	3434	3870	7.1693	2.437	37.071	0.099978
720	0.044615	3472.6	3918.7	7.2189	2.4388	37.847	0.1026
740	0.045627	3511.3	3967.6	7.2676	2.4419	38.615	0.10524
760	0.046633	3550.1	4016.4	7.3153	2.4461	39.378	0.10788
780	0.047633	3589.1	4065.4	7.3623	2.4512	40.134	0.11052
800	0.048629	3628.2	4114.5	7.4085	2.4571	40.884	0.11317

Superheated steam / Subcooled water: Pressure 125 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099448	41.695	54.126	0.14981	4.1506	1293.3	0.58608
20	0.0009962	83.157	95.61	0.29379	4.1471	996.81	0.60416
30	0.0009989	124.59	137.08	0.4329	4.1475	796.45	0.62111
40	0.0010024	166.04	178.57	0.56754	4.15	654.13	0.63628
50	0.0010067	207.5	220.09	0.69805	4.1538	549.1	0.64936
60	0.0010116	249	261.65	0.82471	4.1584	469.23	0.6603
70	0.0010171	290.54	303.26	0.94777	4.1639	407.03	0.66922
80	0.0010233	332.14	344.93	1.0675	4.1705	357.62	0.67631
90	0.00103	373.8	386.67	1.184	4.1785	317.73	0.68179
100	0.0010373	415.54	428.5	1.2977	4.1881	285.06	0.68586
110	0.0010451	457.37	470.44	1.4086	4.1996	257.98	0.6887
120	0.0010536	499.33	512.5	1.5169	4.2133	235.27	0.69045
130	0.0010626	541.43	554.71	1.623	4.2294	216.05	0.69123
140	0.0010723	583.69	597.1	1.7268	4.2481	199.63	0.6911
150	0.0010826	626.15	639.68	1.8287	4.2699	185.48	0.69012
160	0.0010936	668.84	682.51	1.9287	4.295	173.19	0.68831
170	0.0011054	711.78	725.6	2.027	4.3236	162.44	0.68568
180	0.001118	755.02	768.99	2.1239	4.3564	152.96	0.68222
190	0.0011314	798.6	812.74	2.2194	4.3937	144.54	0.67792
200	0.0011458	842.56	856.89	2.3137	4.4363	137.01	0.67274
210	0.0011613	886.97	901.49	2.4069	4.4849	130.23	0.66665
220	0.001178	931.88	946.61	2.4994	4.5404	124.08	0.65959
230	0.001196	977.37	992.32	2.5911	4.6043	118.46	0.65149
240	0.0012156	1023.5	1038.7	2.6825	4.6783	113.27	0.64226
250	0.001237	1070.5	1085.9	2.7736	4.7647	108.45	0.63179
260	0.0012606	1118.3	1134.1	2.8647	4.8667	103.91	0.61996
270	0.0012867	1167.2	1183.3	2.9562	4.989	99.611	0.60662
280	0.001316	1217.5	1233.9	3.0486	5.1385	95.472	0.59164
290	0.0013492	1269.4	1286.2	3.1423	5.3264	91.433	0.57486
300	0.0013878	1323.3	1340.7	3.238	5.571	87.419	0.55619
320	0.00149	1440.7	1459.3	3.4415	6.405	79.047	0.51285
327.81	0.0015461	1492.3	1511.6	3.529	7.0212	75.397	0.49351
327.81	0.013496	2505.6	2674.3	5.4638	9.3478	21.427	0.092195
340	0.015093	2578.8	2767.5	5.6173	6.4746	21.924	0.082928
360	0.017052	2664.3	2877.5	5.794	4.7888	22.823	0.076743
380	0.018642	2731.6	2964.7	5.9297	4.0105	23.74	0.074241
400	0.02003	2789.6	3040	6.0433	3.558	24.655	0.073392
420	0.02129	2841.9	3108	6.1429	3.2653	25.561	0.073487
440	0.02246	2890.5	3171.2	6.2328	3.0636	26.456	0.074196
460	0.023563	2936.4	3231	6.3154	2.9186	27.341	0.075339
480	0.024616	2980.5	3288.2	6.3925	2.8114	28.216	0.076806
500	0.02563	3023.2	3343.6	6.465	2.7304	29.08	0.078524
520	0.02661	3064.9	3397.5	6.534	2.6683	29.934	0.080443
540	0.027564	3105.9	3450.4	6.5998	2.6203	30.779	0.082523
560	0.028496	3146.2	3502.4	6.663	2.583	31.616	0.08473
580	0.029409	3186.2	3553.8	6.7239	2.554	32.443	0.087039
600	0.030306	3225.8	3604.6	6.7828	2.5316	33.262	0.089427
620	0.031189	3265.2	3655.1	6.8399	2.5145	34.073	0.091877
640	0.032059	3304.5	3705.2	6.8955	2.5016	34.876	0.094372
660	0.032919	3343.7	3755.2	6.9496	2.4923	35.671	0.096901
680	0.03377	3382.8	3805	7.0024	2.4859	36.459	0.099454
700	0.034612	3422	3854.6	7.0539	2.4819	37.24	0.10203
720	0.035446	3461.2	3904.2	7.1044	2.48	38.014	0.10461
740	0.036274	3500.4	3953.8	7.1538	2.4798	38.781	0.1072
760	0.037096	3539.7	4003.4	7.2023	2.481	39.541	0.10979
780	0.037912	3579.2	4053.1	7.2499	2.4836	40.295	0.11239
800	0.038724	3618.7	4102.8	7.2967	2.4872	41.043	0.11499

Superheated steam / Subcooled water: Pressure 150 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099334	41.626	56.526	0.14951	4.1422	1291	0.5873
20	0.0009951	83.007	97.934	0.29323	4.1401	995.97	0.60531
30	0.00099782	124.37	139.34	0.43211	4.1413	796.35	0.62225
40	0.0010013	165.75	180.77	0.56656	4.1444	654.41	0.63742
50	0.0010056	207.15	222.23	0.6969	4.1484	549.58	0.65052
60	0.0010105	248.58	263.74	0.8234	4.1532	469.82	0.66149
70	0.001016	290.06	305.3	0.94631	4.1588	407.67	0.67045
80	0.0010221	331.59	346.92	1.0659	4.1655	358.29	0.67758
90	0.0010288	373.18	388.61	1.1823	4.1733	318.4	0.6831
100	0.0010361	414.85	430.39	1.2958	4.1828	285.73	0.68722
110	0.0010439	456.61	472.27	1.4065	4.1941	258.64	0.69011
120	0.0010522	498.49	514.28	1.5148	4.2074	235.92	0.69192
130	0.0010612	540.51	556.43	1.6206	4.2231	216.69	0.69276
140	0.0010708	582.69	598.75	1.7243	4.2414	200.26	0.6927
150	0.001081	625.05	641.27	1.826	4.2626	186.1	0.69178
160	0.001092	667.63	684.01	1.9259	4.287	173.8	0.69005
170	0.0011036	710.46	727.02	2.024	4.3149	163.04	0.6875
180	0.001116	753.58	770.32	2.1206	4.3466	153.56	0.68413
190	0.0011293	797.03	813.97	2.2159	4.3828	145.14	0.67992
200	0.0011435	840.84	857.99	2.31	4.4239	137.61	0.67485
210	0.0011588	885.08	902.46	2.403	4.4707	130.84	0.66888
220	0.0011752	929.8	947.43	2.4951	4.524	124.69	0.66196
230	0.0011929	975.08	992.97	2.5865	4.5852	119.08	0.65403
240	0.0012121	1021	1039.2	2.6774	4.6557	113.91	0.64499
250	0.001233	1067.6	1086.1	2.768	4.7376	109.1	0.63476
260	0.001256	1115.1	1134	2.8586	4.8336	104.6	0.62322
270	0.0012813	1163.6	1182.9	2.9495	4.9478	100.33	0.61024
280	0.0013096	1213.4	1233	3.0409	5.0861	96.239	0.59569
290	0.0013416	1264.6	1284.7	3.1335	5.2572	92.262	0.57945
300	0.0013783	1317.6	1338.3	3.2279	5.4755	88.333	0.56144
320	0.0014733	1431.9	1454	3.4263	6.1784	80.274	0.51995
340	0.0016311	1567.9	1592.4	3.6555	8.0594	70.765	0.47017
342.16	0.001657	1585.3	1610.2	3.6846	8.5132	69.499	0.46401
342.16	0.010338	2455.6	2610.7	5.3106	12.967	22.794	0.11533
360	0.012582	2580.9	2769.7	5.5657	6.7616	23.263	0.092169
380	0.014289	2670.3	2884.7	5.7446	5.0037	24.067	0.084127
400	0.015671	2740.6	2975.7	5.8819	4.1793	24.93	0.080684
420	0.016875	2800.9	3054	5.9967	3.6976	25.808	0.079273
440	0.017964	2855.2	3124.7	6.0971	3.3846	26.688	0.079006
460	0.018973	2905.5	3190.1	6.1876	3.1678	27.562	0.079477
480	0.019923	2952.9	3251.8	6.2706	3.0113	28.43	0.080463
500	0.020827	2998.4	3310.8	6.348	2.8947	29.289	0.081829
520	0.021696	3042.3	3367.8	6.4207	2.8062	30.14	0.083486
540	0.022534	3085.1	3423.2	6.4897	2.7378	30.982	0.085369
560	0.023349	3127.1	3477.4	6.5556	2.6845	31.816	0.087427
580	0.024144	3168.5	3530.6	6.6187	2.6427	32.641	0.089621
600	0.024921	3209.3	3583.1	6.6796	2.6098	33.458	0.091919
620	0.025684	3249.8	3635.1	6.7384	2.5839	34.266	0.094295
640	0.026433	3290	3686.5	6.7954	2.5638	35.067	0.096729
660	0.027172	3330.1	3737.6	6.8508	2.5483	35.86	0.099203
680	0.027901	3370	3788.5	6.9047	2.5366	36.646	0.10171
700	0.028621	3409.8	3839.1	6.9572	2.5281	37.424	0.10423
720	0.029334	3449.6	3889.6	7.0086	2.5222	38.196	0.10676
740	0.030039	3489.4	3940	7.0589	2.5185	38.96	0.1093
760	0.030738	3529.3	3990.4	7.1081	2.5168	39.718	0.11185
780	0.031432	3569.2	4040.7	7.1563	2.5166	40.468	0.11439
800	0.032121	3609.2	4091.1	7.2037	2.5178	41.213	0.11694

Superheated steam / Subcooled water: Pressure 175 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.0009922	41.557	58.92	0.1492	4.1339	1288.8	0.58852
20	0.000994	82.857	100.25	0.29265	4.1332	995.17	0.60647
30	0.00099675	124.15	141.59	0.43132	4.1353	796.26	0.62338
40	0.0010003	165.46	182.96	0.56559	4.1388	654.7	0.63856
50	0.0010045	206.79	224.37	0.69575	4.1432	550.07	0.65168
60	0.0010094	248.16	265.83	0.8221	4.1482	470.41	0.66269
70	0.0010149	289.58	307.34	0.94486	4.1538	408.31	0.67168
80	0.001021	331.04	348.91	1.0643	4.1604	358.95	0.67885
90	0.0010277	372.57	390.55	1.1805	4.1683	319.07	0.68441
100	0.0010348	414.17	432.28	1.2939	4.1775	286.4	0.68858
110	0.0010426	455.86	474.11	1.4045	4.1886	259.3	0.69152
120	0.0010509	497.67	516.06	1.5126	4.2017	236.57	0.69339
130	0.0010598	539.6	558.15	1.6183	4.217	217.33	0.69429
140	0.0010693	581.69	600.41	1.7219	4.2349	200.89	0.69429
150	0.0010795	623.96	642.85	1.8234	4.2555	186.72	0.69344
160	0.0010903	666.45	685.53	1.923	4.2792	174.41	0.69178
170	0.0011018	709.17	728.45	2.021	4.3063	163.65	0.68931
180	0.0011141	752.17	771.66	2.1175	4.3371	154.16	0.68602
190	0.0011272	795.48	815.21	2.2125	4.3721	145.74	0.68191
200	0.0011412	839.15	859.12	2.3063	4.4118	138.21	0.67695
210	0.0011563	883.23	903.46	2.399	4.4569	131.44	0.6711
220	0.0011724	927.76	948.28	2.4909	4.5083	125.3	0.66431
230	0.0011898	972.83	993.65	2.5819	4.5669	119.7	0.65653
240	0.0012086	1018.5	1039.6	2.6724	4.6341	114.54	0.64768
250	0.0012291	1064.9	1086.4	2.7626	4.7119	109.75	0.63768
260	0.0012515	1112	1133.9	2.8527	4.8026	105.27	0.62641
270	0.0012762	1160.1	1182.5	2.9429	4.9096	101.03	0.61377
280	0.0013036	1209.4	1232.2	3.0336	5.0378	96.984	0.59962
290	0.0013344	1260	1283.3	3.1252	5.1946	93.063	0.58388
300	0.0013694	1312.3	1336.2	3.2183	5.3913	89.209	0.56645
320	0.0014584	1423.9	1449.5	3.4124	5.996	81.409	0.52656
340	0.0015968	1552.8	1580.8	3.63	7.3699	72.629	0.4798
354.67	0.0018029	1679.2	1710.8	3.8394	11.743	63.466	0.43725
354.67	0.0079292	2390.5	2529.3	5.1431	20.306	24.595	0.1533
360	0.0088722	2457	2612.3	5.2748	12.559	24.342	0.1274
380	0.010998	2594.9	2787.4	5.5475	6.6722	24.65	0.099728
400	0.012463	2684.3	2902.4	5.7211	5.0526	25.36	0.090767
420	0.013665	2755.5	2994.7	5.8562	4.2527	26.164	0.086709
440	0.014717	2817	3074.6	5.9699	3.7746	27.001	0.084903
460	0.01567	2872.5	3146.7	6.0697	3.4595	27.849	0.084382
480	0.016554	2923.9	3213.6	6.1597	3.2389	28.698	0.084692
500	0.017385	2972.4	3276.7	6.2424	3.0781	29.544	0.085581
520	0.018176	3018.9	3337	6.3194	2.9574	30.385	0.086892
540	0.018936	3063.8	3395.2	6.3918	2.8651	31.219	0.08852
560	0.019668	3107.5	3451.7	6.4605	2.7932	32.046	0.090389
580	0.02038	3150.3	3507	6.5261	2.7368	32.866	0.092438
600	0.021073	3192.5	3561.3	6.589	2.6921	33.678	0.094624
620	0.02175	3234.1	3614.7	6.6495	2.6567	34.482	0.096911
640	0.022414	3275.3	3667.6	6.708	2.6286	35.279	0.099269
660	0.023067	3316.2	3719.9	6.7647	2.6064	36.068	0.10168
680	0.023709	3357	3771.9	6.8198	2.5891	36.85	0.10412
700	0.024342	3397.5	3823.5	6.8734	2.5757	37.625	0.10659
720	0.024968	3438	3874.9	6.9257	2.5656	38.392	0.10907
740	0.025586	3478.4	3926.1	6.9768	2.5582	39.153	0.11156
760	0.026198	3518.8	3977.3	7.0268	2.5533	39.907	0.11405
780	0.026804	3559.2	4028.3	7.0757	2.5503	40.654	0.11654
800	0.027405	3599.7	4079.3	7.1236	2.549	41.395	0.11902

Superheated steam / Subcooled water: Pressure 200 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099107	41.486	61.307	0.14888	4.1259	1286.6	0.58974
20	0.00099292	82.708	102.57	0.29207	4.1264	994.41	0.60762
30	0.00099568	123.93	143.84	0.43053	4.1293	796.2	0.62452
40	0.00099923	165.17	185.16	0.56461	4.1334	655	0.63971
50	0.0010035	206.44	226.51	0.69461	4.138	550.56	0.65285
60	0.0010084	247.75	267.92	0.8208	4.1432	471.01	0.66388
70	0.0010138	289.1	309.38	0.94341	4.1489	408.96	0.6729
80	0.0010199	330.5	350.9	1.0627	4.1555	359.62	0.68011
90	0.0010265	371.96	392.49	1.1788	4.1632	319.75	0.68572
100	0.0010337	413.5	434.17	1.292	4.1724	287.07	0.68993
110	0.0010414	455.12	475.94	1.4025	4.1832	259.96	0.69293
120	0.0010496	496.85	517.84	1.5105	4.196	237.22	0.69485
130	0.0010585	538.7	559.87	1.616	4.211	217.97	0.69581
140	0.0010679	580.71	602.07	1.7194	4.2284	201.51	0.69587
150	0.0010779	622.89	644.45	1.8208	4.2485	187.33	0.6951
160	0.0010886	665.27	687.05	1.9203	4.2716	175.02	0.69351
170	0.0011	707.89	729.89	2.0181	4.2979	164.25	0.69111
180	0.0011122	750.77	773.02	2.1143	4.3278	154.75	0.68791
190	0.0011252	793.96	816.46	2.2091	4.3617	146.33	0.68389
200	0.001139	837.49	860.27	2.3027	4.4002	138.8	0.67903
210	0.0011538	881.41	904.48	2.3952	4.4437	132.03	0.67329
220	0.0011697	925.77	949.16	2.4867	4.4931	125.9	0.66664
230	0.0011868	970.63	994.37	2.5774	4.5493	120.3	0.65901
240	0.0012053	1016.1	1040.2	2.6676	4.6136	115.16	0.65034
250	0.0012254	1062.2	1086.7	2.7573	4.6875	110.39	0.64055
260	0.0012472	1109	1134	2.8469	4.7733	105.93	0.62954
270	0.0012712	1156.8	1182.2	2.9365	4.8739	101.72	0.6172
280	0.0012978	1205.5	1231.5	3.0265	4.9933	97.711	0.60344
290	0.0013275	1255.6	1282.1	3.1172	5.1377	93.839	0.58815
300	0.0013611	1307.1	1334.4	3.2091	5.3162	90.051	0.57126
320	0.001445	1416.6	1445.5	3.3996	5.8447	82.469	0.53279
340	0.0015693	1540.2	1571.6	3.6086	6.9184	74.216	0.48835
360	0.0018248	1703.6	1740.1	3.8787	11.475	62.803	0.43345
365.75	0.00204	1786.4	1827.2	4.0156	22.997	56.181	0.41551
365.75	0.0058652	2295	2412.3	4.9314	45.55	27.484	0.23414
380	0.0082599	2494.2	2659.4	5.3149	10.213	25.783	0.12848
400	0.0099503	2617.9	2816.9	5.5525	6.3675	26.034	0.10547
420	0.011201	2704.7	2928.7	5.7163	4.9851	26.669	0.096514
440	0.012247	2775.5	3020.4	5.8469	4.254	27.418	0.092229
460	0.013171	2837.2	3100.7	5.9579	3.8024	28.213	0.090241
480	0.014012	2893.2	3173.5	6.0559	3.4984	29.028	0.089602
500	0.014793	2945.3	3241.2	6.1446	3.2825	29.849	0.089846
520	0.01553	2994.6	3305.2	6.2263	3.1233	30.672	0.090703
540	0.016231	3041.7	3366.4	6.3025	3.0027	31.492	0.092005
560	0.016904	3087.4	3425.4	6.3743	2.9096	32.308	0.093634
580	0.017554	3131.8	3482.9	6.4424	2.8366	33.118	0.095504
600	0.018185	3175.3	3539	6.5075	2.7788	33.922	0.097552
620	0.018799	3218.1	3594.1	6.5699	2.7328	34.72	0.099729
640	0.019399	3260.4	3648.4	6.63	2.696	35.511	0.102
660	0.019987	3302.3	3702	6.6881	2.6666	36.294	0.10433
680	0.020565	3343.8	3755.1	6.7443	2.6431	37.071	0.10671
700	0.021133	3385.1	3807.8	6.799	2.6245	37.841	0.10911
720	0.021694	3426.2	3860.1	6.8523	2.61	38.604	0.11153
740	0.022247	3467.2	3912.2	6.9042	2.5988	39.36	0.11395
760	0.022793	3508.2	3964.1	6.9549	2.5904	40.109	0.11638
780	0.023334	3549.1	4015.8	7.0045	2.5845	40.852	0.11881
800	0.023869	3590.1	4067.5	7.0531	2.5806	41.588	0.12123

Superheated steam / Subcooled water: Pressure 220 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00099017	41.429	63.212	0.14861	4.1196	1285	0.59071
20	0.00099205	82.588	104.41	0.29161	4.1211	993.84	0.60854
30	0.00099484	123.75	145.64	0.4299	4.1246	796.17	0.62543
40	0.0009984	164.94	186.91	0.56383	4.129	655.26	0.64062
50	0.0010026	206.17	228.22	0.6937	4.1339	550.97	0.65378
60	0.0010075	247.42	269.59	0.81976	4.1392	471.49	0.66483
70	0.001013	288.72	311.01	0.94226	4.145	409.48	0.67388
80	0.001019	330.07	352.49	1.0614	4.1516	360.16	0.68112
90	0.0010256	371.48	394.05	1.1775	4.1593	320.28	0.68677
100	0.0010327	412.96	435.68	1.2906	4.1683	287.6	0.69102
110	0.0010404	454.53	477.42	1.4009	4.179	260.48	0.69405
120	0.0010486	496.2	519.27	1.5088	4.1915	237.74	0.69602
130	0.0010574	537.99	561.25	1.6142	4.2062	218.47	0.69702
140	0.0010667	579.93	603.4	1.7175	4.2233	202.01	0.69714
150	0.0010767	622.04	645.73	1.8187	4.243	187.82	0.69642
160	0.0010874	664.35	688.27	1.9181	4.2656	175.5	0.69489
170	0.0010987	706.88	731.05	2.0157	4.2914	164.72	0.69255
180	0.0011107	749.67	774.11	2.1118	4.3206	155.23	0.68942
190	0.0011235	792.76	817.48	2.2065	4.3537	146.8	0.68547
200	0.0011372	836.18	861.2	2.2999	4.3911	139.28	0.68069
210	0.0011519	879.97	905.31	2.3921	4.4334	132.51	0.67504
220	0.0011676	924.2	949.88	2.4834	4.4813	126.38	0.66848
230	0.0011845	968.9	994.96	2.5739	4.5357	120.79	0.66097
240	0.0012027	1014.2	1040.6	2.6638	4.5978	115.65	0.65244
250	0.0012224	1060.1	1086.9	2.7532	4.6689	110.89	0.64281
260	0.0012439	1106.7	1134	2.8423	4.7511	106.45	0.63199
270	0.0012674	1154.1	1182	2.9315	4.8469	102.26	0.61989
280	0.0012934	1202.6	1231	3.0209	4.9601	98.28	0.60641
290	0.0013223	1252.2	1281.3	3.111	5.0957	94.444	0.59146
300	0.0013548	1303.2	1333	3.2021	5.2616	90.703	0.57498
320	0.0014351	1411.1	1442.7	3.39	5.7406	83.273	0.53753
340	0.0015506	1531.3	1565.4	3.5934	6.6495	75.353	0.49463
360	0.0017601	1680.7	1719.4	3.8404	9.4488	65.326	0.44387
373.71	0.0027044	1951.8	2011.3	4.2945	1249.2	46.846	0.87031
373.71	0.0036475	2092.8	2173.1	4.5446	1934.6	37.493	1.042
380	0.0061234	2369.7	2504.5	5.0555	19.404	27.88	0.18211
400	0.0082556	2554.2	2735.8	5.4051	8.0211	26.869	0.12291
420	0.0095893	2659.1	2870	5.6018	5.7582	27.222	0.10678
440	0.010651	2739.4	2973.7	5.7494	4.7208	27.847	0.099425
460	0.011565	2807.3	3061.7	5.871	4.121	28.572	0.095766
480	0.012385	2867.5	3140	5.9764	3.7323	29.343	0.094105
500	0.013138	2922.7	3211.8	6.0705	3.4628	30.134	0.093678
520	0.013842	2974.5	3279	6.1563	3.2672	30.935	0.094076
540	0.014508	3023.6	3342.8	6.2358	3.1207	31.739	0.095054
560	0.015144	3070.9	3404	6.3102	3.0083	32.542	0.096448
580	0.015755	3116.7	3463.3	6.3805	2.9206	33.342	0.098145
600	0.016347	3161.3	3521	6.4473	2.8513	34.137	0.10006
620	0.016921	3205.2	3577.4	6.5113	2.7961	34.927	0.10213
640	0.017481	3248.3	3632.9	6.5727	2.7518	35.711	0.10432
660	0.018028	3290.9	3687.6	6.6319	2.7162	36.489	0.10658
680	0.018565	3333.2	3741.6	6.6892	2.6875	37.26	0.10889
700	0.019092	3375.1	3795.1	6.7447	2.6646	38.025	0.11124
720	0.019611	3416.8	3848.2	6.7988	2.6463	38.783	0.1136
740	0.020122	3458.3	3901	6.8514	2.6318	39.535	0.11597
760	0.020627	3499.7	3953.5	6.9027	2.6207	40.28	0.11835
780	0.021126	3541	4005.8	6.9529	2.6123	41.019	0.12073
800	0.02162	3582.4	4058	7.002	2.6062	41.751	0.1231

Superheated steam / Subcooled water: Pressure 250 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00098884	41.341	66.062	0.14819	4.1103	1282.6	0.59217
20	0.00099077	82.409	107.18	0.29089	4.1133	993.02	0.60993
30	0.00099358	123.49	148.33	0.42894	4.1177	796.15	0.62679
40	0.00099715	164.61	189.53	0.56265	4.1227	655.65	0.64199
50	0.0010014	205.75	230.79	0.69233	4.1279	551.58	0.65517
60	0.0010063	246.94	272.09	0.81821	4.1334	472.22	0.66626
70	0.0010117	288.16	313.46	0.94054	4.1393	410.26	0.67535
80	0.0010177	329.44	354.88	1.0595	4.1458	360.96	0.68264
90	0.0010242	370.77	396.38	1.1754	4.1534	321.09	0.68833
100	0.0010313	412.17	437.95	1.2883	4.1623	288.4	0.69264
110	0.0010389	453.65	479.63	1.3986	4.1727	261.27	0.69574
120	0.0010471	495.24	521.41	1.5062	4.1849	238.51	0.69777
130	0.0010558	536.94	563.33	1.6115	4.1992	219.23	0.69884
140	0.001065	578.78	605.41	1.7146	4.2159	202.76	0.69903
150	0.0010749	620.78	647.66	1.8156	4.235	188.56	0.69839
160	0.0010854	662.98	690.11	1.9148	4.2568	176.23	0.69695
170	0.0010966	705.39	732.8	2.0122	4.2817	165.44	0.6947
180	0.0011085	748.05	775.76	2.1081	4.31	155.93	0.69167
190	0.0011211	790.99	819.02	2.2025	4.3418	147.5	0.68783
200	0.0011346	834.24	862.61	2.2956	4.3778	139.98	0.68316
210	0.0011491	877.86	906.59	2.3876	4.4184	133.21	0.67764
220	0.0011645	921.88	951	2.4786	4.4643	127.08	0.67123
230	0.001181	966.37	995.89	2.5687	4.5162	121.5	0.66388
240	0.0011989	1011.4	1041.3	2.6582	4.5751	116.38	0.65554
250	0.0012181	1057	1087.4	2.7471	4.6423	111.64	0.64614
260	0.0012391	1103.2	1134.2	2.8357	4.7195	107.22	0.6356
270	0.0012619	1150.3	1181.9	2.9242	4.8089	103.06	0.62384
280	0.001287	1198.3	1230.5	3.0129	4.9136	99.114	0.61075
290	0.0013148	1247.3	1280.2	3.102	5.0377	95.326	0.59627
300	0.0013459	1297.6	1331.3	3.1919	5.1874	91.649	0.58035
320	0.0014215	1403.4	1438.9	3.3764	5.6058	84.416	0.54429
340	0.0015264	1519.4	1557.5	3.5731	6.3392	76.896	0.50334
360	0.0016969	1656.2	1698.6	3.7993	8.0796	68.078	0.4569
380	0.0022182	1880.3	1935.7	4.1671	23.358	52.391	0.39372
400	0.0060047	2428.5	2578.6	5.14	13.032	29.173	0.16824
420	0.0075792	2580	2769.4	5.4197	7.4156	28.433	0.12821
440	0.0086986	2679.8	2897.3	5.6016	5.6062	28.701	0.11316
460	0.0096176	2758.9	2999.4	5.7428	4.6885	29.25	0.10578
480	0.010419	2826.7	3087.2	5.861	4.1333	29.916	0.10199
500	0.011143	2887.3	3165.9	5.9642	3.7639	30.639	0.10022
520	0.011811	2943.2	3238.4	6.0569	3.5031	31.392	0.099734
540	0.012436	2995.6	3306.5	6.1416	3.3113	32.16	0.1001
560	0.013029	3045.5	3371.2	6.2202	3.166	32.936	0.10106
580	0.013595	3093.5	3433.3	6.294	3.0537	33.714	0.10244
600	0.01414	3140	3493.5	6.3637	2.9653	34.491	0.10411
620	0.014667	3185.4	3552.1	6.43	2.895	35.266	0.106
640	0.015179	3229.9	3609.4	6.4935	2.8385	36.037	0.10804
660	0.015678	3273.7	3665.7	6.5545	2.7929	36.803	0.11017
680	0.016165	3317	3721.2	6.6133	2.756	37.564	0.11237
700	0.016643	3359.9	3776	6.6702	2.726	38.32	0.11462
720	0.017113	3402.4	3830.2	6.7254	2.7018	39.07	0.11689
740	0.017574	3444.7	3884.1	6.7791	2.6823	39.814	0.11917
760	0.018029	3486.8	3937.6	6.8313	2.6668	40.552	0.12146
780	0.018478	3528.8	3990.8	6.8823	2.6545	41.283	0.12375
800	0.018922	3570.7	4043.8	6.9322	2.6451	42.009	0.12604

Superheated steam / Subcooled water: Pressure 300 bar							
T (C)	v (m3/kg)	u (kJ/kg)	h (kJ/kg)	s (J/g*K)	Cp (J/g*K)	μ (μPa*s)	k (W/mK)
10	0.00098664	41.193	70.792	0.14745	4.0954	1278.8	0.59459
20	0.00098865	82.112	111.77	0.28968	4.1007	991.78	0.61223
30	0.0009915	123.06	152.81	0.42732	4.1064	796.19	0.62906
40	0.00099509	164.05	193.9	0.56069	4.1123	656.36	0.64427
50	0.00099933	205.07	235.05	0.69005	4.1181	552.64	0.6575
60	0.0010042	246.14	276.26	0.81564	4.1239	473.45	0.66864
70	0.0010096	287.24	317.53	0.93769	4.1299	411.58	0.67779
80	0.0010155	328.4	358.86	1.0564	4.1364	362.31	0.68516
90	0.001022	369.6	400.26	1.172	4.1438	322.44	0.69093
100	0.001029	410.87	441.74	1.2847	4.1524	289.74	0.69533
110	0.0010365	452.22	483.32	1.3946	4.1625	262.59	0.69853
120	0.0010445	493.66	525	1.502	4.1742	239.8	0.70067
130	0.0010531	535.21	566.81	1.607	4.1879	220.5	0.70186
140	0.0010623	576.89	608.76	1.7098	4.2037	203.99	0.70218
150	0.001072	618.73	650.89	1.8106	4.2219	189.77	0.70167
160	0.0010823	660.74	693.21	1.9094	4.2427	177.42	0.70036
170	0.0010932	702.95	735.75	2.0065	4.2663	166.62	0.69827
180	0.0011049	745.4	778.54	2.102	4.2929	157.1	0.69539
190	0.0011173	788.1	821.62	2.1961	4.323	148.66	0.69172
200	0.0011304	831.1	865.02	2.2888	4.3567	141.13	0.68723
210	0.0011445	874.44	908.77	2.3803	4.3947	134.36	0.68192
220	0.0011595	918.14	952.93	2.4707	4.4374	128.24	0.67573
230	0.0011755	962.27	997.54	2.5603	4.4854	122.67	0.66865
240	0.0011927	1006.9	1042.7	2.6491	4.5397	117.57	0.66061
250	0.0012113	1052	1088.4	2.7373	4.6011	112.85	0.65157
260	0.0012314	1097.8	1134.7	2.825	4.6711	108.46	0.64145
270	0.0012532	1144.2	1181.8	2.9126	4.7513	104.35	0.63019
280	0.001277	1191.5	1229.8	3.0001	4.844	100.46	0.6177
290	0.0013032	1239.6	1278.7	3.0878	4.9523	96.74	0.60393
300	0.0013322	1288.9	1328.9	3.176	5.0803	93.152	0.58883
320	0.0014014	1391.6	1433.7	3.3557	5.4231	86.186	0.55478
340	0.0014932	1502.3	1547.1	3.5438	5.9698	79.161	0.51643
360	0.0016276	1626.7	1675.6	3.7498	7.0015	71.489	0.4745
380	0.0018729	1782	1838.2	4.0025	9.8609	61.769	0.42353
400	0.0027978	2068.9	2152.8	4.4757	25.868	43.937	0.33204
420	0.0049203	2405.3	2552.9	5.0627	12.763	32.534	0.19151
440	0.0062267	2562.1	2748.9	5.3416	7.8064	30.993	0.14723
460	0.0071931	2668.2	2884	5.5286	5.9377	30.878	0.12843
480	0.0079923	2752.3	2992	5.6741	4.9573	31.205	0.1188
500	0.0086904	2824	3084.7	5.7956	4.356	31.724	0.11362
520	0.00932	2888	3167.6	5.9014	3.9528	32.341	0.11097
540	0.0099	2946.6	3243.6	5.9961	3.6665	33.012	0.10989
560	0.010442	3001.5	3314.7	6.0825	3.4549	33.716	0.10985
580	0.010955	3053.5	3382.2	6.1625	3.2939	34.438	0.11052
600	0.011445	3103.4	3446.7	6.2373	3.1688	35.171	0.11167
620	0.011914	3151.7	3509.1	6.3079	3.0699	35.909	0.11315
640	0.012368	3198.6	3569.7	6.375	2.9907	36.649	0.11487
660	0.012808	3244.6	3628.8	6.4391	2.9267	37.389	0.11674
680	0.013236	3289.7	3686.8	6.5006	2.8747	38.128	0.11871
700	0.013653	3334.3	3743.9	6.5598	2.8322	38.863	0.12075
720	0.014062	3378.3	3800.2	6.6171	2.7973	39.594	0.12284
740	0.014463	3421.9	3855.8	6.6726	2.7688	40.321	0.12495
760	0.014857	3465.2	3910.9	6.7264	2.7454	41.044	0.12707
780	0.015245	3508.3	3965.7	6.7789	2.7265	41.761	0.12919
800	0.015628	3551.2	4020	6.83	2.7111	42.474	0.13132

5. Properties of water during sublimation

Temp. °C	Pressure kPa	Specific Volume m³/kg		Internal Energy kJ/kg			Enthalpy kJ/kg			Enropy kJ/kg · K		
		Sat. Solid $v_i \times 10^3$	Sat. Vapor v_g	Sat. Solid u_i	Subl. u_{ig}	Sat. Vapor u_g	Sat. Solid h_i	Subl. h_{ig}	Sat. Vapor h_g	Sat. Solid s_i	Subl. s_{ig}	Sat. Vapor s_g
.01	.6113	1.0908	206.1	−333.40	2708.7	2375.3	−333.40	2834.8	2501.4	−1.221	10.378	9.156
0	.6108	1.0908	206.3	−333.43	2708.8	2375.3	−333.43	2834.8	2501.3	−1.221	10.378	9.157
−2	.5176	1.0904	241.7	−337.62	2710.2	2372.6	−337.62	2835.3	2497.7	−1.237	10.456	9.219
−4	.4375	1.0901	283.8	−341.78	2711.6	2369.8	−341.78	2835.7	2494.0	−1.253	10.536	9.283
−6	.3689	1.0898	334.2	−345.91	2712.9	2367.0	−345.91	2836.2	2490.3	−1.268	10.616	9.348
−8	.3102	1.0894	394.4	−350.02	2714.2	2364.2	−350.02	2836.6	2486.6	−1.284	10.698	9.414
−10	.2602	1.0891	466.7	−354.09	2715.5	2361.4	−354.09	2837.0	2482.9	−1.299	10.781	9.481
−12	.2176	1.0888	553.7	−358.14	2716.8	2358.7	−358.14	2837.3	2479.2	−1.315	10.865	9.550
−14	.1815	1.0884	658.8	−362.15	2718.0	2355.9	−362.15	2837.6	2475.5	−1.331	10.950	9.619
−16	.1510	1.0881	786.0	−366.14	2719.2	2353.1	−366.14	2837.9	2471.8	−1.346	11.036	9.690
−18	.1252	1.0878	940.5	−370.10	2720.4	2350.3	−370.10	2838.2	2468.1	−1.362	11.123	9.762
−20	.1035	1.0874	1128.6	−374.03	2721.6	2347.5	−374.03	2838.4	2464.3	−1.377	11.212	9.835
−22	.0853	1.0871	1358.4	−377.93	2722.7	2344.7	−377.93	2838.6	2460.6	−1.393	11.302	9.909
−24	.0701	1.0868	1640.1	−381.80	2723.7	2342.0	−381.80	2838.7	2456.9	−1.408	11.394	9.985
−26	.0574	1.0864	1986.4	−385.64	2724.8	2339.2	−385.64	2838.9	2453.2	−1.424	11.486	10.062
−28	.0469	1.0861	2413.7	−389.45	2725.8	2336.4	−389.45	2839.0	2449.5	−1.439	11.580	10.141
−30	.0381	1.0858	2943	−393.23	2726.8	2333.6	−393.23	2839.0	2445.8	−1.455	11.676	10.221
−32	.0309	1.0854	3600	−396.98	2727.8	2330.8	−396.98	2839.1	2442.1	−1.471	11.773	10.303
−34	.0250	1.0851	4419	−400.71	2728.7	2328.0	−400.71	2839.1	2438.4	−1.486	11.872	10.386
−36	.0201	1.0848	5444	−404.40	2729.6	2325.2	−404.40	2839.1	2434.7	−1.501	11.972	10.470
−38	.0161	1.0844	6731	−408.06	2730.5	2322.4	−408.06	2839.0	2430.9	−1.517	12.073	10.556
−40	.0129	1.0841	8354	−411.70	2731.3	2319.6	−411.70	2838.9	2427.2	−1.532	12.176	10.644

Source: J. H. Keenan, F. G. Keyes, P. G. Hill, and J. G. Moore, *Steam Tables*, Wiley, New York, 1978.

Saturation temperature tables

T (c)	P(bar)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (μPa*s)	μ_g (μPa*s)	k_f (W/m*K)	k_g (W/m*K)
-60	0.37505	0.000683	0.5368	133.24	358.46	133.27	378.59	0.726	1.877	0.021239	446.03	8.9129	0.12258	0.006123
-50	0.6453	0.000697	0.32385	143.98	362.52	144.03	383.42	0.77525	1.848	0.019578	388.79	9.3231	0.11774	0.006593
-46	0.78943	0.000702	0.26837	148.3	364.13	148.36	385.32	0.79444	1.8376	0.018921	368.98	9.4862	0.11583	0.006788
-44	0.87049	0.000705	0.24498	150.47	364.93	150.53	386.26	0.80393	1.8327	0.018595	359.64	9.5675	0.11488	0.006888
-40	1.0523	0.000711	0.20521	154.81	366.53	154.89	388.13	0.82274	1.8231	0.017944	341.97	9.7298	0.11299	0.007089
-36	1.2628	0.000717	0.17304	159.18	368.12	159.27	389.97	0.8413	1.8141	0.017298	325.53	9.8917	0.11111	0.007295
-32	1.505	0.000723	0.14682	163.56	369.7	163.67	391.79	0.85964	1.8056	0.016656	310.19	10.053	0.10928	0.007505
-30	1.6389	0.000726	0.13553	165.76	370.48	165.88	392.69	0.86873	1.8015	0.016337	302.89	10.134	0.10836	0.007613
-28	1.7819	0.000729	0.12528	167.97	371.26	168.1	393.58	0.87777	1.7975	0.016019	295.84	10.215	0.10744	0.007721
-26	1.9344	0.000733	0.11597	170.18	372.03	170.33	394.47	0.88677	1.7937	0.015702	289	10.296	0.10652	0.007831
-22	2.2696	0.000739	0.099749	174.63	373.57	174.8	396.21	0.90462	1.7862	0.015072	275.94	10.457	0.1047	0.008055
-20	2.4531	0.000743	0.092681	176.86	374.33	177.04	397.06	0.91347	1.7826	0.014759	269.71	10.538	0.10378	0.008169
-18	2.6479	0.000746	0.086214	179.1	375.08	179.3	397.91	0.92229	1.7791	0.014447	263.65	10.619	0.10287	0.008285
-16	2.8543	0.00075	0.08029	181.35	375.83	181.56	398.75	0.93107	1.7757	0.014136	257.77	10.701	0.10197	0.008402
-14	3.0728	0.000753	0.074854	183.6	376.57	183.83	399.57	0.9398	1.7723	0.013826	252.04	10.782	0.10106	0.008521
-12	3.3038	0.000757	0.06986	185.86	377.31	186.11	400.39	0.9485	1.769	0.013518	246.48	10.864	0.10015	0.008642
-10	3.5479	0.000761	0.065266	188.13	378.04	188.4	401.2	0.95717	1.7658	0.013211	241.06	10.946	0.09925	0.008764
-8	3.8054	0.000764	0.061033	190.41	378.77	190.7	401.99	0.9658	1.7627	0.012906	235.79	11.029	0.098347	0.008889
-6	4.0769	0.000768	0.057129	192.7	379.48	193.01	402.77	0.97439	1.7596	0.012602	230.65	11.112	0.097445	0.009015
-4	4.3628	0.000772	0.053524	194.99	380.19	195.33	403.55	0.98296	1.7566	0.012299	225.64	11.195	0.096543	0.009144
-2	4.6636	0.000776	0.050191	197.3	380.9	197.66	404.3	0.99149	1.7536	0.011998	220.75	11.279	0.095643	0.009274
0	4.9799	0.00078	0.047105	199.61	381.59	200	405.05	1	1.7507	0.011698	215.98	11.363	0.094743	0.009408
2	5.312	0.000785	0.044244	201.93	382.28	202.35	405.78	1.0085	1.7478	0.011399	211.32	11.449	0.093843	0.009543
4	5.6605	0.000789	0.04159	204.27	382.95	204.71	406.5	1.0169	1.745	0.011102	206.77	11.535	0.092944	0.009681
6	6.0259	0.000793	0.039125	206.61	383.62	207.09	407.2	1.0254	1.7422	0.010806	202.32	11.621	0.092045	0.009822
8	6.4088	0.000798	0.036833	208.96	384.28	209.47	407.89	1.0338	1.7395	0.010512	197.97	11.709	0.091146	0.009966
10	6.8095	0.000802	0.034699	211.32	384.93	211.87	408.56	1.0422	1.7368	0.010219	193.71	11.798	0.090247	0.010113
12	7.2286	0.000807	0.03271	213.7	385.57	214.28	409.21	1.0505	1.7341	0.009928	189.55	11.888	0.089348	0.010263
16	8.1244	0.000816	0.029123	218.48	386.81	219.14	410.47	1.0672	1.7289	0.009351	181.46	12.072	0.087547	0.010574
20	9.1002	0.000827	0.025989	223.31	388.01	224.06	411.66	1.0838	1.7238	0.00878	173.7	12.262	0.085742	0.010902
24	10.16	0.000837	0.023241	228.18	389.15	229.04	412.77	1.1004	1.7187	0.008217	166.21	12.46	0.083933	0.011247
28	11.309	0.000848	0.020823	233.12	390.24	234.08	413.79	1.1169	1.7136	0.00766	158.99	12.667	0.082116	0.011615
32	12.552	0.00086	0.018686	238.11	391.26	239.19	414.71	1.1334	1.7086	0.007111	152.01	12.884	0.080291	0.012007
36	13.892	0.000873	0.016792	243.16	392.21	244.38	415.54	1.1499	1.7036	0.006569	145.25	13.114	0.078454	0.012429
40	15.336	0.000886	0.015107	248.29	393.08	249.65	416.25	1.1665	1.6985	0.006036	138.67	13.359	0.076604	0.012886
44	16.887	0.0009	0.013603	253.49	393.86	255.01	416.83	1.183	1.6933	0.005512	132.28	13.622	0.074737	0.013386
46	17.704	0.000908	0.012911	256.12	394.21	257.73	417.07	1.1913	1.6906	0.005253	129.14	13.762	0.073797	0.013654
50	19.427	0.000924	0.011634	261.45	394.83	263.25	417.44	1.208	1.6852	0.004742	122.96	14.06	0.0719	0.014234
60	24.275	0.000971	0.008961	275.26	395.8	277.61	417.55	1.2504	1.6705	0.003512	107.99	14.948	0.06704	0.016027

Saturation pressure tables

P(bar)	T (c)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (μPa*s)	μ_g (uPa*s)	k_f (W/m*K)	k_g (W/m*K)
0.4	-58.868	0.000685	0.50556	134.45	358.92	134.48	379.14	0.73168	1.8735	0.02105	438.92	8.9595	0.12203	0.006175
0.5	-54.834	0.00069	0.41072	138.78	360.56	138.81	381.1	0.75168	1.8615	0.020378	414.96	9.1253	0.12007	0.006363
0.6	-51.405	0.000695	0.34657	142.47	361.95	142.51	382.74	0.76844	1.8518	0.01981	396.13	9.2657	0.11841	0.006526
0.7	-48.405	0.000699	0.3002	145.7	363.16	145.75	384.18	0.78293	1.8438	0.019316	380.71	9.3882	0.11698	0.006671
0.8	-45.73	0.000703	0.26506	148.59	364.24	148.65	385.44	0.79572	1.8369	0.018877	367.7	9.4971	0.1157	0.006802
0.9	-43.308	0.000706	0.23747	151.22	365.21	151.28	386.58	0.8072	1.831	0.018482	356.49	9.5956	0.11455	0.006922
1	-41.091	0.000709	0.21523	153.63	366.1	153.7	387.62	0.81763	1.8257	0.018121	346.66	9.6856	0.1135	0.007034
1.2	-37.135	0.000715	0.1815	157.94	367.67	158.02	389.45	0.83606	1.8166	0.017481	330.07	9.8458	0.11164	0.007236
1.4	-33.667	0.00072	0.15711	161.73	369.04	161.83	391.04	0.85202	1.8091	0.016923	316.45	9.986	0.11004	0.007417
1.6	-30.567	0.000725	0.13862	165.14	370.26	165.25	392.44	0.86616	1.8027	0.016427	304.94	10.111	0.10862	0.007582
1.8	-27.756	0.00073	0.1241	168.24	371.35	168.37	393.69	0.87888	1.7971	0.01598	294.99	10.225	0.10733	0.007735
2	-25.177	0.000734	0.11238	171.1	372.35	171.24	394.83	0.89045	1.7921	0.015572	286.25	10.329	0.10615	0.007877
2.2	-22.791	0.000738	0.10272	173.75	373.27	173.91	395.86	0.9011	1.7876	0.015196	278.46	10.425	0.10506	0.00801
2.4	-20.567	0.000742	0.09462	176.23	374.11	176.41	396.82	0.91097	1.7836	0.014847	271.46	10.515	0.10404	0.008137
2.6	-18.481	0.000745	0.087717	178.56	374.9	178.76	397.71	0.92017	1.7799	0.014522	265.09	10.6	0.10309	0.008257
2.8	-16.515	0.000749	0.081766	180.77	375.64	180.98	398.53	0.92881	1.7765	0.014216	259.26	10.68	0.1022	0.008372
3	-14.654	0.000752	0.07658	182.87	376.33	183.09	399.31	0.93695	1.7734	0.013927	253.9	10.756	0.10136	0.008482
3.2	-12.885	0.000755	0.072018	184.86	376.99	185.1	400.03	0.94466	1.7705	0.013655	248.92	10.828	0.10055	0.008588
3.4	-11.199	0.000758	0.067974	186.77	377.6	187.03	400.72	0.95198	1.7677	0.013395	244.29	10.897	0.099792	0.008691
3.6	-9.5864	0.000761	0.064362	188.61	378.19	188.88	401.36	0.95895	1.7651	0.013148	239.96	10.963	0.099063	0.00879
3.8	-8.0409	0.000764	0.061116	190.37	378.75	190.66	401.98	0.96562	1.7627	0.012912	235.89	11.027	0.098365	0.008886
4	-6.5559	0.000767	0.058183	192.06	379.29	192.37	402.56	0.97201	1.7604	0.012686	232.06	11.088	0.097695	0.00898
4.2	-5.1262	0.00077	0.055519	193.7	379.79	194.02	403.11	0.97814	1.7583	0.012469	228.44	11.148	0.097051	0.009071
4.4	-3.7472	0.000773	0.053088	195.29	380.28	195.63	403.64	0.98404	1.7562	0.012261	225.01	11.205	0.09643	0.00916
4.6	-2.4148	0.000775	0.050861	196.82	380.75	197.18	404.15	0.98973	1.7542	0.01206	221.75	11.261	0.09583	0.009247
4.8	-1.1255	0.000778	0.048812	198.31	381.2	198.68	404.63	0.99522	1.7523	0.011866	218.65	11.316	0.095249	0.009332
5	0.12398	0.000781	0.046921	199.76	381.63	200.15	405.09	1.0005	1.7505	0.011679	215.69	11.369	0.094687	0.009416
5.2	1.3363	0.000783	0.04517	201.16	382.05	201.57	405.54	1.0057	1.7488	0.011498	212.85	11.42	0.094142	0.009498
5.4	2.5141	0.000786	0.043543	202.53	382.45	202.96	405.96	1.0107	1.7471	0.011322	210.14	11.471	0.093612	0.009578
5.6	3.6594	0.000788	0.042028	203.87	382.84	204.31	406.38	1.0155	1.7455	0.011152	207.54	11.52	0.093097	0.009658
5.8	4.7745	0.00079	0.040614	205.17	383.21	205.63	406.77	1.0202	1.7439	0.010987	205.03	11.568	0.092596	0.009735
6	5.8611	0.000793	0.039291	206.45	383.58	206.92	407.15	1.0248	1.7424	0.010827	202.63	11.615	0.092108	0.009812
7	10.92	0.000804	0.033767	212.41	385.22	212.98	408.86	1.046	1.7356	0.010085	191.78	11.839	0.089833	0.010182
8	15.465	0.000815	0.029575	217.84	386.65	218.49	410.31	1.065	1.7296	0.009428	182.53	12.047	0.087788	0.010532
9	19.604	0.000825	0.026281	222.83	387.89	223.57	411.54	1.0822	1.7243	0.008837	174.45	12.243	0.085921	0.010868
10	23.415	0.000836	0.023621	227.47	388.99	228.3	412.61	1.098	1.7194	0.008299	167.29	12.431	0.084198	0.011196
12	30.261	0.000855	0.019583	235.93	390.82	236.96	414.32	1.1262	1.7108	0.007348	155.02	12.788	0.081085	0.011833
14	36.308	0.000874	0.016655	243.56	392.28	244.78	415.6	1.1512	1.7032	0.006528	144.73	13.132	0.078312	0.012463
16	41.748	0.000892	0.014429	250.55	393.43	251.98	416.52	1.1737	1.6962	0.005806	135.86	13.471	0.07579	0.013099
18	46.706	0.000911	0.012676	257.05	394.33	258.69	417.15	1.1943	1.6897	0.005162	128.04	13.812	0.073464	0.013752
20	51.273	0.000929	0.011256	263.17	395.01	265.03	417.52	1.2134	1.6834	0.004582	121.02	14.16	0.071292	0.014432
24	59.475	0.000968	0.009086	274.51	395.77	276.83	417.58	1.2482	1.6713	0.003574	108.77	14.895	0.0673	0.015917

Superheated/subcooled R22 Pressure 0.4 bar (T sat = -58.868)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.00068468	134.45	134.48	0.73168	1.0718	438.92	0.12203
g	0.50556	358.92	379.14	1.8735	0.56593	8.9595	0.0061751
-55	0.51531	360.73	381.34	1.8836	0.56942	9.1321	0.00635
-50	0.52787	363.08	384.2	1.8966	0.57409	9.3548	0.00658
-45	0.54038	365.47	387.08	1.9093	0.57893	9.5772	0.0068145
-40	0.55284	367.87	389.99	1.922	0.5839	9.7992	0.0070536
-35	0.56528	370.31	392.92	1.9344	0.58898	10.021	0.0072971
-30	0.57767	372.77	395.88	1.9467	0.59416	10.242	0.007545
-25	0.59004	375.26	398.86	1.9588	0.59942	10.463	0.0077974
-20	0.60238	377.78	401.87	1.9708	0.60475	10.684	0.0080542
-15	0.6147	380.32	404.91	1.9827	0.61015	10.904	0.0083154
-10	0.627	382.89	407.97	1.9945	0.61559	11.123	0.0085809
-5	0.63928	385.49	411.07	2.0061	0.62107	11.342	0.0088507
0	0.65154	388.12	414.18	2.0176	0.62658	11.561	0.0091249

Superheated/subcooled R22 Pressure 0.6 bar (T sat = -51.4059)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
-55	0.00068978	138.6	138.64	0.75085	1.0747	415.94	0.12015
f	0.00069465	142.47	142.51	0.76844	1.0779	396.13	0.11841
g	0.34657	361.95	382.74	1.8518	0.58162	9.2657	0.0065259
-50	0.34897	362.62	383.56	1.8555	0.58269	9.329	0.0065908
-45	0.35749	365.04	386.49	1.8685	0.58669	9.5538	0.0068249
-40	0.36596	367.47	389.43	1.8812	0.59094	9.778	0.0070635
-35	0.37439	369.93	392.4	1.8938	0.59539	10.002	0.0073067
-30	0.38279	372.42	395.38	1.9062	0.60001	10.225	0.0075543
-25	0.39116	374.93	398.4	1.9185	0.60477	10.447	0.0078064
-20	0.3995	377.46	401.43	1.9306	0.60966	10.669	0.0080629
-15	0.40782	380.02	404.49	1.9426	0.61465	10.891	0.0083238
-10	0.41611	382.61	407.58	1.9544	0.61974	11.112	0.0085891
-5	0.42438	385.23	410.69	1.9661	0.6249	11.332	0.0088587
0	0.43264	387.87	413.83	1.9777	0.63012	11.552	0.0091327

Superheated/subcooled R22 Pressure 0.8 bar (T sat = -45.73)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.00070254	148.59	148.65	0.79572	1.0837	367.7	0.1157
g	0.26506	364.24	385.44	1.8369	0.59446	9.4971	0.0068018
-45	0.26601	364.6	385.88	1.8389	0.59493	9.5303	0.0068361
-40	0.27249	367.06	388.86	1.8518	0.59833	9.7568	0.0070742
-35	0.27893	369.55	391.86	1.8645	0.60207	9.9824	0.0073169
-30	0.28533	372.06	394.88	1.8771	0.60608	10.207	0.0075641
-25	0.2917	374.59	397.92	1.8895	0.61031	10.432	0.0078158
-20	0.29804	377.14	400.99	1.9017	0.61472	10.655	0.008072
-15	0.30436	379.72	404.07	1.9137	0.61929	10.878	0.0083327
-10	0.31065	382.33	407.18	1.9257	0.624	11.1	0.0085977
-5	0.31693	384.96	410.31	1.9375	0.62882	11.322	0.0088671
0	0.32318	387.61	413.47	1.9491	0.63374	11.542	0.0091408
5	0.32942	390.3	416.65	1.9607	0.63874	11.762	0.0094188
10	0.33564	393	419.86	1.9721	0.64381	11.982	0.009701

Superheated/subcooled R22 Pressure 1.0 bar (T sat = -41.091)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
-45	0.00070356	149.38	149.45	0.79917	1.0845	364.32	0.11536
f	0.00070922	153.63	153.7	0.81763	1.0892	346.66	0.1135
g	0.21523	366.1	387.62	1.8257	0.60561	9.6856	0.0070335
-40	0.21638	366.65	388.28	1.8285	0.60618	9.7354	0.0070858
-35	0.22162	369.16	391.32	1.8414	0.60909	9.9632	0.0073279
-30	0.22683	371.69	394.37	1.8541	0.61241	10.19	0.0075746
-25	0.23201	374.24	397.45	1.8666	0.61605	10.416	0.0078258
-20	0.23715	376.82	400.54	1.8789	0.61995	10.641	0.0080816
-15	0.24227	379.42	403.65	1.8911	0.62407	10.865	0.0083419
-10	0.24737	382.04	406.78	1.9031	0.62837	11.089	0.0086066
-5	0.25244	384.68	409.93	1.915	0.63284	11.311	0.0088757
0	0.2575	387.35	413.1	1.9267	0.63744	11.533	0.0091492
5	0.26254	390.05	416.3	1.9383	0.64215	11.754	0.0094269
10	0.26756	392.77	419.53	1.9498	0.64697	11.975	0.0097089

Superheated/subcooled R22 Pressure 1.5 bar (T sat =-32.077)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00072285	163.48	163.59	0.85929	1.1017	310.47	0.10931
g	0.14727	369.67	391.76	1.8058	0.62911	10.05	0.0075014
-30	0.14877	370.75	393.07	1.8112	0.62966	10.146	0.0076037
-25	0.15236	373.36	396.22	1.824	0.63148	10.377	0.0078535
-20	0.15592	375.99	399.38	1.8366	0.63387	10.606	0.0081079
-15	0.15945	378.64	402.56	1.8491	0.6367	10.833	0.0083671
-10	0.16296	381.31	405.75	1.8613	0.63988	11.06	0.0086307
-5	0.16644	383.99	408.96	1.8734	0.64336	11.286	0.0088989
0	0.1699	386.7	412.18	1.8853	0.64708	11.51	0.0091716
5	0.17334	389.43	415.43	1.8971	0.65102	11.734	0.0094486
10	0.17677	392.18	418.69	1.9087	0.65514	11.957	0.0097299
15	0.18018	394.95	421.98	1.9202	0.65942	12.178	0.010016
20	0.18357	397.75	425.29	1.9316	0.66383	12.399	0.010305
25	0.18696	400.57	428.62	1.9429	0.66835	12.619	0.010599

Superheated/subcooled R22 Pressure 2.0 bar (T sat = -25.177)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
-30	0.00072607	165.75	165.89	0.86868	1.1048	302.99	0.10838
f	0.00073393	171.1	171.24	0.89045	1.1131	286.25	0.10615
g	0.11238	372.35	394.83	1.7921	0.64894	10.329	0.0078765
-25	0.11248	372.45	394.94	1.7926	0.64894	10.337	0.0078854
-20	0.11526	375.14	398.19	1.8055	0.6493	10.57	0.0081379
-15	0.118	377.84	401.44	1.8182	0.65049	10.802	0.0083954
-10	0.12071	380.55	404.69	1.8307	0.65232	11.032	0.0086577
-5	0.1234	383.28	407.96	1.843	0.65463	11.26	0.0089246
0	0.12607	386.03	411.24	1.8551	0.65736	11.488	0.0091961
5	0.12872	388.79	414.53	1.8671	0.66042	11.714	0.0094722
10	0.13135	391.57	417.84	1.8789	0.66377	11.939	0.0097526
15	0.13396	394.38	421.17	1.8905	0.66735	12.163	0.010037
20	0.13656	397.21	424.52	1.902	0.67114	12.386	0.010327
25	0.13915	400.05	427.88	1.9134	0.67511	12.607	0.01062

Superheated/subcooled R22 Pressure 2.5 bar (T sat = -19.508)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
-19.508	0.0007435	177.41	177.6	0.91565	1.1236	268.2	0.10356
-19.508	0.091036	374.51	397.27	1.7817	0.6666	10.558	0.0081973
-15	0.093087	377	400.27	1.7935	0.66578	10.77	0.0084276
-10	0.095333	379.77	403.6	1.8062	0.66589	11.004	0.0086879
-5	0.097552	382.55	406.94	1.8188	0.66681	11.236	0.0089531
0	0.099748	385.34	410.27	1.8311	0.66836	11.466	0.0092232
5	0.10192	388.14	413.62	1.8432	0.67041	11.695	0.0094979
10	0.10408	390.96	416.98	1.8552	0.67288	11.922	0.0097773
15	0.10622	393.79	420.35	1.867	0.6757	12.148	0.010061
20	0.10834	396.65	423.73	1.8787	0.67881	12.373	0.010349
25	0.11045	399.52	427.14	1.8902	0.68218	12.596	0.010642
30	0.11255	402.42	430.56	1.9015	0.68576	12.819	0.010939
35	0.11464	405.34	434	1.9128	0.68952	13.04	0.01124
40	0.11672	408.27	437.45	1.9239	0.69345	13.26	0.011545

Superheated/subcooled R22 Pressure 3.0 bar (T sat = -14.654)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
-15	0.00075143	182.47	182.7	0.93543	1.1328	254.9	0.10151
f	0.00075206	182.87	183.09	0.93695	1.1336	253.9	0.10136
g	0.07658	376.33	399.31	1.7734	0.68281	10.756	0.0084818
-10	0.078384	378.96	402.48	1.7855	0.68088	10.976	0.0087218
-5	0.080295	381.79	405.88	1.7984	0.68006	11.211	0.0089849
0	0.082179	384.63	409.28	1.8109	0.68019	11.444	0.009253
5	0.084041	387.47	412.68	1.8233	0.68107	11.676	0.0095262
10	0.085883	390.33	416.09	1.8354	0.68254	11.905	0.0098041
15	0.087707	393.2	419.51	1.8474	0.6845	12.134	0.010087
20	0.089515	396.08	422.94	1.8592	0.68686	12.36	0.010374
25	0.09131	398.99	426.38	1.8708	0.68957	12.586	0.010665
30	0.093092	401.91	429.83	1.8823	0.69256	12.81	0.010961
35	0.094862	404.85	433.3	1.8937	0.69581	13.032	0.011261
40	0.096622	407.81	436.79	1.9049	0.69926	13.254	0.011566

Superheated/subcooled R22 Pressure 3.5 bar (T sat = -10.384)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0007599	187.7	187.96	0.95551	1.1431	242.09	0.099423
g	0.066118	377.9	401.04	1.7664	0.69797	10.93	0.0087405
-10	0.06625	378.12	401.31	1.7674	0.69766	10.949	0.0087602
-5	0.067944	381.01	404.79	1.7805	0.69461	11.187	0.0090203
0	0.06961	383.9	408.26	1.7934	0.69302	11.423	0.0092861
5	0.071252	386.79	411.72	1.8059	0.69251	11.657	0.0095572
10	0.072872	389.68	415.19	1.8183	0.69283	11.889	0.0098333
15	0.074473	392.59	418.65	1.8304	0.69381	12.12	0.010114
20	0.076057	395.51	422.13	1.8423	0.69533	12.348	0.0104
25	0.077627	398.44	425.61	1.8541	0.69731	12.576	0.01069
30	0.079184	401.39	429.1	1.8657	0.69966	12.801	0.010985
35	0.080728	404.35	432.6	1.8772	0.70234	13.026	0.011284
40	0.082262	407.33	436.12	1.8885	0.70529	13.249	0.011588
45	0.083785	410.33	439.66	1.8997	0.70848	13.47	0.011896

Superheated/subcooled R22 Pressure 4.0 bar (T sat = -6.5559)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
-10	0.00076053	188.11	188.42	0.95708	1.1437	241.18	0.099275
f	0.0007672	192.06	192.37	0.97201	1.1522	232.06	0.097695
g	0.058183	379.29	402.56	1.7604	0.71236	11.088	0.0089797
-5	0.058658	380.2	403.67	1.7646	0.71079	11.163	0.0090602
0	0.060165	383.14	407.21	1.7777	0.70704	11.402	0.0093228
5	0.061644	386.08	410.74	1.7905	0.70486	11.639	0.0095912
10	0.0631	389.02	414.26	1.803	0.70382	11.874	0.0098652
15	0.064536	391.96	417.78	1.8153	0.70369	12.106	0.010144
20	0.065954	394.92	421.3	1.8274	0.70427	12.337	0.010428
25	0.067357	397.88	424.82	1.8394	0.70543	12.566	0.010717
30	0.068745	400.85	428.35	1.8511	0.70708	12.794	0.011011
35	0.070121	403.84	431.89	1.8627	0.70914	13.02	0.011309
40	0.071486	406.85	435.44	1.8741	0.71155	13.244	0.011612
45	0.07284	409.87	439.01	1.8854	0.71426	13.467	0.011918

Superheated/subcooled R22 Pressure 4.5 bar (T sat = -3.0754)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00077406	196.06	196.41	0.98691	1.161	223.36	0.096127
g	0.051951	380.52	403.9	1.7552	0.72616	11.234	0.0092038
0	0.0528	382.36	406.12	1.7634	0.72249	11.382	0.0093637
5	0.054156	385.36	409.73	1.7764	0.71826	11.622	0.0096288
10	0.055487	388.34	413.31	1.7892	0.71563	11.859	0.0099001
15	0.056796	391.33	416.88	1.8017	0.7142	12.093	0.010177
20	0.058086	394.31	420.45	1.814	0.71371	12.326	0.010459
25	0.05936	397.31	424.02	1.8261	0.71397	12.557	0.010746
30	0.060619	400.32	427.59	1.838	0.71485	12.786	0.011038
35	0.061865	403.33	431.17	1.8497	0.71624	13.014	0.011335
40	0.063099	406.36	434.76	1.8612	0.71806	13.24	0.011636
45	0.064323	409.41	438.35	1.8726	0.72025	13.464	0.011942
50	0.065537	412.47	441.96	1.8839	0.72275	13.687	0.012252
55	0.066742	415.55	445.58	1.895	0.72552	13.908	0.012566

Superheated/subcooled R22 Pressure 5.0 bar (T sat = 0.12398)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00078058	199.76	200.15	1.0005	1.1696	215.69	0.094687
g	0.046921	381.63	405.09	1.7505	0.7395	11.369	0.0094158
5	0.04815	384.61	408.68	1.7635	0.73292	11.605	0.0096705
10	0.049384	387.64	412.33	1.7765	0.72838	11.844	0.0099383
15	0.050594	390.67	415.97	1.7893	0.72545	12.081	0.010212
20	0.051783	393.7	419.59	1.8017	0.72374	12.316	0.010492
25	0.052955	396.73	423.21	1.814	0.72298	12.549	0.010777
30	0.054112	399.77	426.82	1.826	0.723	12.78	0.011068
35	0.055255	402.81	430.44	1.8378	0.72365	13.009	0.011363
40	0.056385	405.87	434.06	1.8495	0.72483	13.236	0.011663
45	0.057504	408.94	437.69	1.861	0.72646	13.462	0.011967
50	0.058614	412.02	441.33	1.8723	0.72847	13.686	0.012276
55	0.059714	415.12	444.97	1.8835	0.7308	13.908	0.012589

Superheated/subcooled R22 Pressure 5.5 bar (T sat = 3.0907)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00078682	203.2	203.64	1.0131	1.178	208.83	0.093353
g	0.042773	382.65	406.17	1.7463	0.75247	11.495	0.0096181
5	0.043222	383.83	407.61	1.7514	0.74909	11.588	0.0097167
10	0.044378	386.92	411.33	1.7647	0.74222	11.83	0.0099804
15	0.045509	390	415.03	1.7777	0.73752	12.07	0.010251
20	0.046618	393.07	418.71	1.7903	0.7344	12.307	0.010528
25	0.047708	396.14	422.38	1.8027	0.7325	12.541	0.010811
30	0.048781	399.21	426.04	1.8149	0.73156	12.774	0.011099
35	0.04984	402.28	429.69	1.8269	0.7314	13.004	0.011393
40	0.050887	405.36	433.35	1.8387	0.73189	13.233	0.011691
45	0.051921	408.46	437.01	1.8503	0.73291	13.46	0.011994
50	0.052946	411.56	440.68	1.8617	0.73439	13.685	0.012302
55	0.053961	414.68	444.36	1.873	0.73626	13.909	0.012614
60	0.054967	417.81	448.05	1.8841	0.73845	14.131	0.01293

Superheated/subcooled R22 Pressure 6.0 bar (T sat = 5.8611)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00079282	206.45	206.92	1.0248	1.1862	202.63	0.092108
g	0.039291	383.58	407.15	1.7424	0.76515	11.615	0.0098122
10	0.040195	386.18	410.3	1.7536	0.75736	11.817	0.010027
15	0.041261	389.31	414.07	1.7668	0.75054	12.059	0.010293
20	0.042305	392.43	417.81	1.7797	0.74579	12.298	0.010567
25	0.043328	395.53	421.53	1.7923	0.74259	12.534	0.010847
30	0.044333	398.64	425.24	1.8046	0.74058	12.769	0.011133
35	0.045324	401.74	428.94	1.8167	0.73953	13.001	0.011424
40	0.0463	404.85	432.63	1.8286	0.73925	13.231	0.011721
45	0.047265	407.97	436.33	1.8403	0.73962	13.459	0.012022
50	0.048219	411.1	440.03	1.8519	0.74053	13.686	0.012329
55	0.049163	414.24	443.74	1.8632	0.74189	13.91	0.01264
60	0.050099	417.39	447.45	1.8745	0.74365	14.133	0.012955

Superheated/subcooled R22 Pressure 7.0 bar (T sat = 10.92)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00080425	212.41	212.98	1.046	1.2024	191.78	0.089833
g	0.033767	385.22	408.86	1.7356	0.78988	11.839	0.010182
15	0.034558	387.87	412.06	1.7468	0.78006	12.04	0.01039
20	0.035503	391.09	415.94	1.7601	0.77116	12.283	0.010655
25	0.036425	394.28	419.78	1.7731	0.76474	12.523	0.010928
30	0.037326	397.46	423.59	1.7858	0.76017	12.76	0.011207
35	0.038211	400.63	427.38	1.7982	0.75702	12.995	0.011494
40	0.039081	403.81	431.16	1.8103	0.75499	13.228	0.011786
45	0.039937	406.98	434.93	1.8223	0.75387	13.459	0.012084
50	0.040782	410.15	438.7	1.834	0.7535	13.688	0.012387
55	0.041616	413.34	442.47	1.8456	0.75376	13.914	0.012695
60	0.042441	416.53	446.24	1.857	0.75454	14.14	0.013007
65	0.043257	419.74	450.02	1.8683	0.75578	14.363	0.013325
70	0.044066	422.95	453.8	1.8794	0.75739	14.585	0.013646

Superheated/subcooled R22 Pressure 8.0 bar (T sat = 15.465)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.00081509	217.84	218.49	1.065	1.2183	182.53	0.087788
g	0.029575	386.65	410.31	1.7296	0.81407	12.047	0.010532
20	0.030371	389.67	413.97	1.7422	0.80086	12.271	0.01076
25	0.031222	392.97	417.94	1.7556	0.79011	12.514	0.011022
30	0.03205	396.23	421.87	1.7687	0.78223	12.755	0.011294
35	0.032858	399.48	425.77	1.7814	0.77644	12.993	0.011573
40	0.03365	402.72	429.64	1.7939	0.77228	13.228	0.01186
45	0.034428	405.95	433.5	1.8061	0.76938	13.461	0.012153
50	0.035192	409.18	437.34	1.8181	0.76751	13.692	0.012451
55	0.035946	412.42	441.17	1.8299	0.76649	13.921	0.012756
60	0.036689	415.65	445	1.8415	0.76617	14.148	0.013065
65	0.037423	418.9	448.83	1.8529	0.76644	14.373	0.013379
70	0.038149	422.15	452.67	1.8641	0.76721	14.597	0.013698

Superheated/subcooled R22 Pressure 9.0 bar (T sat = 19.604)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.00082549	222.83	223.57	1.0822	1.234	174.45	0.085921
g	0.026281	387.89	411.54	1.7243	0.83799	12.243	0.010868
20	0.026346	388.16	411.88	1.7254	0.83642	12.263	0.010887
30	0.027924	394.95	420.08	1.7529	0.80737	12.753	0.011395
40	0.029411	401.6	428.07	1.7788	0.79141	13.231	0.011943
50	0.030834	408.18	435.93	1.8036	0.78273	13.7	0.012523
60	0.032207	414.75	443.74	1.8273	0.77862	14.159	0.013129
70	0.033541	421.33	451.51	1.8503	0.77761	14.611	0.013755
80	0.034843	427.94	459.29	1.8727	0.77879	15.055	0.014402
90	0.03612	434.59	467.1	1.8945	0.78158	15.493	0.015065
100	0.037375	441.29	474.93	1.9158	0.78555	15.925	0.015745
110	0.038613	448.06	482.81	1.9366	0.79039	16.351	0.01644
120	0.039834	454.89	490.74	1.957	0.79589	16.771	0.017148
130	0.041043	461.79	498.73	1.9771	0.80188	17.187	0.017871
140	0.04224	468.76	506.78	1.9968	0.80821	17.597	0.018606
150	0.043427	475.81	514.89	2.0162	0.81481	18.003	0.019353

Superheated/subcooled R22 Pressure 10.0 bar (T sat = 23.415)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.00083554	227.47	228.3	1.098	1.2499	167.29	0.084198
g	0.023621	388.99	412.61	1.7194	0.86186	12.431	0.011196
30	0.024601	393.59	418.19	1.738	0.83645	12.755	0.011513
35	0.025314	397.03	422.34	1.7516	0.82293	12.998	0.01177
40	0.026005	400.42	426.43	1.7648	0.81277	13.238	0.012039
50	0.027336	407.15	434.48	1.7901	0.79932	13.71	0.012604
60	0.028613	413.82	442.44	1.8143	0.79198	14.173	0.013199
70	0.029848	420.49	450.34	1.8377	0.78865	14.628	0.013817
80	0.031049	427.17	458.22	1.8603	0.78809	15.075	0.014457
90	0.032223	433.88	466.1	1.8824	0.78952	15.515	0.015116
100	0.033375	440.64	474.01	1.9038	0.79242	15.948	0.015792
110	0.034508	447.45	481.96	1.9248	0.7964	16.376	0.016483
120	0.035625	454.32	489.94	1.9454	0.80119	16.798	0.01719
130	0.036728	461.25	497.98	1.9656	0.80659	17.215	0.017909
140	0.03782	468.26	506.08	1.9855	0.81243	17.626	0.018642
150	0.038901	475.33	514.23	2.005	0.81861	18.033	0.019388

Superheated/subcooled R22 Pressure12.0 bar (T sat = 30.261)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00085494	235.93	236.96	1.1262	1.282	155.02	0.081085
g	0.019583	390.82	414.32	1.7108	0.9101	12.788	0.011833
40	0.020851	397.92	422.94	1.7388	0.86428	13.264	0.012276
50	0.022059	404.97	431.44	1.7655	0.83767	13.742	0.012796
60	0.0232	411.89	439.73	1.7908	0.82201	14.21	0.013361
70	0.024292	418.75	447.9	1.8149	0.81296	14.669	0.013959
80	0.025345	425.59	456	1.8382	0.80825	15.12	0.014583
90	0.026369	432.43	464.07	1.8607	0.80655	15.564	0.015229
100	0.027367	439.3	472.14	1.8826	0.80701	16.001	0.015895
110	0.028345	446.21	480.22	1.904	0.80906	16.431	0.016579
120	0.029306	453.16	488.33	1.9249	0.81229	16.856	0.017278
130	0.030253	460.17	496.47	1.9453	0.81641	17.275	0.017993
140	0.031187	467.23	504.66	1.9654	0.82119	17.689	0.018721
150	0.03211	474.36	512.89	1.9851	0.82647	18.097	0.019462
160	0.033023	481.56	521.19	2.0045	0.83211	18.501	0.020215
170	0.033928	488.82	529.54	2.0235	0.83803	18.9	0.02098

Superheated/subcooled R22 Pressure 14.0 bar (T sat = 36.308)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00087373	243.56	244.78	1.1512	1.3155	144.73	0.078312
g	0.016655	392.28	415.6	1.7032	0.96002	13.132	0.012463
40	0.017107	395.14	419.09	1.7144	0.9332	13.312	0.012599
50	0.018248	402.61	428.16	1.7429	0.88527	13.792	0.013043
60	0.019305	409.83	436.86	1.7694	0.85759	14.262	0.013561
70	0.020302	416.92	445.34	1.7945	0.84086	14.723	0.014128
80	0.021256	423.94	453.7	1.8185	0.83085	15.177	0.014729
90	0.022175	430.93	461.98	1.8416	0.82531	15.623	0.015359
100	0.023067	437.92	470.22	1.864	0.82287	16.062	0.016012
110	0.023936	444.93	478.44	1.8858	0.82267	16.494	0.016686
120	0.024787	451.97	486.67	1.907	0.82411	16.921	0.017377
130	0.025623	459.06	494.93	1.9277	0.82679	17.342	0.018084
140	0.026445	466.19	503.21	1.948	0.83038	17.757	0.018806
150	0.027256	473.38	511.54	1.9679	0.83468	18.167	0.019542
160	0.028057	480.63	519.91	1.9875	0.8395	18.572	0.020291
170	0.028849	487.94	528.33	2.0067	0.84471	18.973	0.021052

Superheated/subcooled R22 Pressure 16.0 bar (T sat = 41.748)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00089224	250.55	251.98	1.1737	1.351	135.86	0.07579
g	0.014429	393.43	416.52	1.6962	1.0127	13.471	0.013099
50	0.015344	400.03	424.58	1.7215	0.9467	13.863	0.013367
60	0.016353	407.63	433.79	1.7496	0.90069	14.331	0.013811
70	0.017289	414.99	442.65	1.7758	0.87333	14.792	0.014331
80	0.018173	422.22	451.29	1.8006	0.85644	15.246	0.014901
90	0.019018	429.37	459.8	1.8244	0.84612	15.693	0.015508
100	0.019833	436.5	468.23	1.8472	0.84019	16.132	0.016145
110	0.020623	443.62	476.62	1.8694	0.83735	16.566	0.016805
120	0.021393	450.76	484.99	1.891	0.83674	16.993	0.017486
130	0.022146	457.92	493.36	1.912	0.83779	17.415	0.018184
140	0.022886	465.13	501.75	1.9326	0.84006	17.831	0.018899
150	0.023613	472.38	510.16	1.9527	0.84327	18.242	0.019629
160	0.02433	479.69	518.61	1.9724	0.84718	18.648	0.020373
170	0.025038	487.05	527.11	1.9918	0.85163	19.05	0.02113

Superheated/subcooled R22 Pressure 18.0 bar (T sat = 46.706)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0009107	257.05	258.69	1.1943	1.3895	128.04	0.073464
g	0.012676	394.33	417.15	1.6897	1.0692	13.812	0.013752
50	0.013033	397.14	420.6	1.7004	1.0304	13.963	0.013808
60	0.014025	405.24	430.49	1.7305	0.95446	14.422	0.014128
70	0.014924	412.93	439.8	1.7581	0.91178	14.879	0.014578
80	0.01576	420.41	448.78	1.7839	0.88573	15.329	0.015104
90	0.016552	427.75	457.54	1.8084	0.86937	15.774	0.015681
100	0.017309	435.03	466.18	1.8318	0.8592	16.213	0.016295
110	0.018039	442.27	474.74	1.8545	0.85325	16.646	0.016938
120	0.018748	449.51	483.26	1.8764	0.85027	17.073	0.017606
130	0.019439	456.77	491.76	1.8978	0.84946	17.495	0.018294
140	0.020114	464.05	500.25	1.9186	0.85026	17.911	0.019001
150	0.020777	471.37	508.76	1.9389	0.85227	18.323	0.019723
160	0.021429	478.73	517.3	1.9589	0.85519	18.729	0.020461
170	0.022072	486.14	525.87	1.9784	0.85881	19.131	0.021212

Superheated/subcooled R22 Pressure 20.0 bar (T sat = 51.273)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00092932	263.17	265.03	1.2134	1.4316	121.02	0.071292
g	0.011256	395.01	417.52	1.6834	1.1309	14.16	0.014432
60	0.012126	402.62	426.87	1.7119	1.0242	14.542	0.014541
70	0.013009	410.73	436.75	1.7411	0.95832	14.986	0.014883
80	0.013815	418.5	446.13	1.768	0.91971	15.43	0.015345
90	0.014568	426.06	455.19	1.7933	0.89558	15.87	0.01588
100	0.015282	433.5	464.07	1.8174	0.88019	16.306	0.016465
110	0.015966	440.88	472.82	1.8406	0.87052	16.737	0.017087
120	0.016627	448.23	481.49	1.8629	0.86479	17.162	0.017739
130	0.017269	455.58	490.12	1.8846	0.86188	17.583	0.018415
140	0.017894	462.94	498.73	1.9057	0.86102	17.999	0.019111
150	0.018507	470.33	507.35	1.9263	0.8617	18.41	0.019825
160	0.019107	477.76	515.97	1.9465	0.86354	18.816	0.020556
170	0.019698	485.22	524.62	1.9662	0.86627	19.217	0.021301
180	0.020281	492.74	533.3	1.9856	0.86967	19.615	0.02206

Superheated/subcooled R22 Pressure 24.0 bar (T sat = 59.475)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00096778	274.51	276.83	1.2482	1.5314	108.77	0.0673
g	0.0090859	395.77	417.58	1.6713	1.2758	14.895	0.015917
60	0.00914	396.31	418.24	1.6733	1.2618	14.913	0.01589
70	0.01006	405.74	429.89	1.7077	1.091	15.289	0.015755
80	0.010848	414.3	440.34	1.7378	1.0078	15.695	0.015985
90	0.011559	422.42	450.16	1.7652	0.95974	16.112	0.016385
100	0.012219	430.27	459.59	1.7908	0.92961	16.532	0.016882
110	0.012841	437.97	468.79	1.8151	0.91008	16.952	0.017443
120	0.013434	445.58	477.82	1.8384	0.89735	17.37	0.01805
130	0.014005	453.14	486.75	1.8608	0.88925	17.785	0.018691
140	0.014558	460.67	495.61	1.8826	0.88443	18.196	0.01936
150	0.015095	468.22	504.44	1.9037	0.882	18.603	0.020053
160	0.01562	475.77	513.26	1.9243	0.88135	19.006	0.020766
170	0.016134	483.35	522.08	1.9444	0.88205	19.406	0.021496
180	0.016639	490.97	530.9	1.9641	0.88377	19.801	0.022242

Saturation temperature tables

T (c)	P (bar)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (μPa*s)	μ_g (μPa*s)	k_f (W/m*K)	k_g (W/m*K)
-40	0.51209	0.000705	0.36108	148.11	355.51	148.14	374	0.79561	1.7643	0.017597	467.03	9.269	0.11059	0.008174
-36	0.62908	0.000711	0.29771	153.14	357.81	153.18	376.54	0.817	1.7588	0.01697	438.8	9.4164	0.10864	0.0085
-32	0.76658	0.000717	0.24727	158.19	360.11	158.25	379.06	0.83814	1.7538	0.016349	413.02	9.563	0.10672	0.008827
-28	0.92703	0.000723	0.2068	163.28	362.4	163.34	381.57	0.85906	1.7492	0.015732	389.39	9.709	0.10482	0.009155
-26	1.0167	0.000727	0.18958	165.83	363.55	165.9	382.82	0.86943	1.7471	0.015425	378.3	9.7818	0.10387	0.00932
-24	1.113	0.00073	0.17407	168.39	364.7	168.47	384.07	0.87975	1.7451	0.01512	367.65	9.8545	0.10293	0.009485
-22	1.2165	0.000733	0.16006	170.96	365.84	171.05	385.32	0.89002	1.7432	0.014816	357.42	9.927	0.102	0.00965
-20	1.3273	0.000736	0.14739	173.54	366.99	173.64	386.55	0.90025	1.7413	0.014513	347.58	9.9995	0.10107	0.009816
-18	1.446	0.00074	0.13592	176.12	368.13	176.23	387.79	0.91042	1.7396	0.014212	338.12	10.072	0.10014	0.009983
-16	1.5728	0.000743	0.12551	178.72	369.28	178.83	389.02	0.92054	1.7379	0.013912	329	10.144	0.099225	0.01015
-12	1.8524	0.00075	0.10744	183.93	371.55	184.07	391.46	0.94066	1.7348	0.013315	311.73	10.289	0.097398	0.010486
-8	2.1693	0.000757	0.092422	189.17	373.82	189.34	393.87	0.9606	1.732	0.012725	295.65	10.434	0.095588	0.010825
-4	2.5268	0.000765	0.079866	194.45	376.07	194.65	396.25	0.98037	1.7294	0.012139	280.61	10.58	0.093794	0.011168
0	2.928	0.000772	0.069309	199.77	378.31	200	398.6	1	1.7271	0.01156	266.53	10.726	0.092013	0.011514
4	3.3766	0.00078	0.060385	205.13	380.53	205.4	400.92	1.0195	1.725	0.010986	253.29	10.874	0.090246	0.011865
8	3.8761	0.000789	0.052804	210.53	382.73	210.84	403.2	1.0388	1.723	0.010419	240.83	11.023	0.088491	0.012221
12	4.4301	0.000797	0.046332	215.98	384.9	216.33	405.43	1.0581	1.7212	0.009858	229.07	11.175	0.086747	0.012584
16	5.0425	0.000807	0.04078	221.46	387.05	221.87	407.61	1.0772	1.7196	0.009303	217.93	11.33	0.085011	0.012955
20	5.7171	0.000816	0.035997	227	389.17	227.47	409.75	1.0962	1.718	0.008756	207.37	11.488	0.083284	0.013335
24	6.4578	0.000826	0.031858	232.59	391.25	233.12	411.82	1.1152	1.7166	0.008215	197.32	11.651	0.081564	0.013725
26	6.8543	0.000831	0.029998	235.4	392.28	235.97	412.84	1.1246	1.7159	0.007947	192.48	11.735	0.080705	0.013925
28	7.2688	0.000837	0.028263	238.23	393.29	238.84	413.84	1.1341	1.7152	0.007681	187.75	11.82	0.079848	0.014129
30	7.702	0.000842	0.026642	241.07	394.3	241.72	414.82	1.1435	1.7145	0.007417	183.13	11.907	0.078992	0.014336
32	8.1543	0.000848	0.025126	243.93	395.29	244.62	415.78	1.1529	1.7138	0.007155	178.61	11.995	0.078136	0.014548
34	8.6263	0.000854	0.023708	246.8	396.27	247.54	416.72	1.1623	1.7131	0.006895	174.18	12.086	0.077281	0.014764
36	9.1185	0.00086	0.02238	249.69	397.24	250.48	417.65	1.1717	1.7124	0.006637	169.85	12.179	0.076426	0.014986
38	9.6315	0.000866	0.021135	252.6	398.19	253.43	418.55	1.1811	1.7118	0.006381	165.61	12.275	0.075571	0.015213
40	10.166	0.000872	0.019966	255.52	399.13	256.41	419.43	1.1905	1.7111	0.006127	161.45	12.373	0.074716	0.015446
42	10.722	0.000879	0.018868	258.46	400.05	259.41	420.28	1.1999	1.7103	0.005875	157.37	12.474	0.07386	0.015687
44	11.301	0.000885	0.017837	261.42	400.96	262.43	421.11	1.2092	1.7096	0.005626	153.37	12.579	0.073003	0.015935
48	12.529	0.0009	0.015951	267.41	402.71	268.53	422.69	1.228	1.7081	0.005133	145.57	12.8	0.071287	0.016458
52	13.854	0.000915	0.014276	273.47	404.37	274.74	424.15	1.2469	1.7064	0.004651	138.03	13.039	0.069565	0.017023
56	15.282	0.000932	0.012782	279.64	405.94	281.06	425.47	1.2658	1.7045	0.004178	130.72	13.3	0.067834	0.017641
60	16.818	0.00095	0.011444	285.91	407.38	287.5	426.63	1.2848	1.7024	0.003716	123.61	13.587	0.066091	0.018326
70	21.168	0.001004	0.008653	302.16	410.33	304.28	428.65	1.3332	1.6956	0.002614	106.51	14.475	0.061672	0.020471
80	26.332	0.001077	0.006448	319.55	411.83	322.39	428.81	1.3836	1.685	0.001602	89.846	15.773	0.057147	0.023735
90	32.442	0.001194	0.004613	339.06	410.45	342.93	425.42	1.439	1.6662	0.000712	72.45	18.023	0.052755	0.029819
100	39.724	0.001536	0.002681	367.2	397.03	373.3	407.68	1.5188	1.6109	3.71E-05	47.429	25.42	0.058884	0.058976

Saturation pressure tables

P (bar)	T (c)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (μPa*s)	μ_g (μPa*s)	k_f (W/m*K)	k_g (W/m*K)
0.6	-36.935	0.00071	0.31123	151.96	357.27	152	375.94	0.81202	1.7601	0.017116	445.16	9.382	0.1091	0.008423
0.8	-31.115	0.000719	0.23755	159.31	360.61	159.37	379.62	0.84278	1.7528	0.016212	407.62	9.5954	0.1063	0.008899
1	-26.361	0.000726	0.19256	165.37	363.34	165.44	382.6	0.86756	1.7475	0.015481	380.27	9.7687	0.10404	0.00929
1.2	-22.31	0.000732	0.16214	170.56	365.67	170.65	385.12	0.88844	1.7435	0.014863	358.98	9.9158	0.10214	0.009625
1.4	-18.76	0.000738	0.14015	175.14	367.7	175.24	387.32	0.90656	1.7402	0.014326	341.67	10.044	0.1005	0.00992
1.6	-15.588	0.000744	0.12349	179.25	369.51	179.37	389.27	0.92262	1.7376	0.01385	327.16	10.159	0.099036	0.010185
1.8	-12.712	0.000749	0.11042	183	371.15	183.13	391.02	0.93709	1.7353	0.013421	314.72	10.263	0.097723	0.010426
2	-10.076	0.000753	0.099877	186.45	372.64	186.6	392.62	0.95027	1.7334	0.01303	303.86	10.359	0.096526	0.010649
2.4	-5.3653	0.000762	0.083906	192.65	375.3	192.83	395.44	0.97364	1.7303	0.012338	285.63	10.53	0.094405	0.01105
2.8	-1.2277	0.00077	0.07236	198.14	377.62	198.35	397.89	0.99399	1.7278	0.011737	270.75	10.681	0.092558	0.011407
3.2	2.4768	0.000777	0.063611	203.09	379.69	203.34	400.04	1.0121	1.7257	0.011204	258.24	10.817	0.090918	0.011731
3.6	5.8412	0.000784	0.056744	207.61	381.54	207.9	401.97	1.0284	1.724	0.010724	247.47	10.942	0.089437	0.012028
4	8.9306	0.000791	0.051207	211.79	383.24	212.11	403.72	1.0433	1.7226	0.010288	238.03	11.058	0.088084	0.012305
5	15.735	0.000806	0.041123	221.1	386.91	221.5	407.47	1.0759	1.7197	0.00934	218.65	11.32	0.085126	0.01293
6	21.572	0.00082	0.0343	229.19	389.99	229.68	410.57	1.1037	1.7175	0.008542	203.36	11.552	0.082608	0.013487
7	26.713	0.000833	0.029365	236.41	392.64	236.99	413.2	1.128	1.7156	0.007852	190.78	11.765	0.0804	0.013997
8	31.327	0.000846	0.025625	242.97	394.96	243.65	415.46	1.1497	1.714	0.007243	180.11	11.965	0.078424	0.014476
9	35.526	0.000858	0.022687	249.01	397.01	249.78	417.43	1.1695	1.7126	0.006698	170.87	12.157	0.076629	0.014933
10	39.388	0.00087	0.020316	254.63	398.85	255.5	419.16	1.1876	1.7113	0.006204	162.71	12.343	0.074978	0.015374
12	46.315	0.000894	0.016718	264.88	401.98	265.95	422.04	1.2201	1.7087	0.00534	148.82	12.705	0.072011	0.016233
14	52.422	0.000917	0.01411	274.12	404.54	275.4	424.3	1.2489	1.7062	0.0046	137.25	13.065	0.069382	0.017085
16	57.906	0.00094	0.012126	282.61	406.64	284.11	426.04	1.2748	1.7036	0.003957	127.31	13.433	0.067005	0.017958
18	62.895	0.000964	0.010562	290.52	408.35	292.26	427.36	1.2987	1.7007	0.003389	118.58	13.816	0.064822	0.018874
20	67.481	0.000989	0.009292	297.98	409.7	299.95	428.28	1.3209	1.6976	0.002884	110.75	14.223	0.062795	0.019856
24	75.692	0.001042	0.00734	311.88	411.42	314.38	429.04	1.3615	1.6902	0.002026	97.02	15.143	0.059107	0.022129
26	79.405	0.001072	0.006567	318.47	411.8	321.26	428.88	1.3805	1.6858	0.00166	90.84	15.678	0.057418	0.02349
30	86.203	0.001141	0.005281	331.28	411.49	334.7	427.34	1.4171	1.6748	0.001032	79.282	16.984	0.054346	0.02694

Superheated/subcooled R134a Pressure 0.6 bar (T sat = -36.935)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00070982	151.96	152	0.81202	1.26	445.16	0.1091
g	0.31123	357.27	375.94	1.7601	0.75848	9.382	0.0084233
-30	0.32149	361.93	381.22	1.7821	0.7635	9.6618	0.0089772
-20	0.33608	368.74	388.91	1.8131	0.77492	10.062	0.0097763
-10	0.35049	375.7	396.73	1.8434	0.78879	10.46	0.010576
0	0.36476	382.8	404.69	1.873	0.80387	10.854	0.011376
10	0.37893	390.07	412.81	1.9022	0.81958	11.247	0.012176
20	0.39303	397.5	421.08	1.931	0.83564	11.637	0.012976
30	0.40705	405.1	429.52	1.9593	0.85187	12.025	0.013776
40	0.42102	412.86	438.12	1.9872	0.86819	12.412	0.014576
50	0.43495	420.79	446.88	2.0147	0.88452	12.797	0.015376
60	0.44884	428.88	455.81	2.0419	0.90082	13.18	0.016177
70	0.46269	437.14	464.9	2.0688	0.91707	13.562	0.016977
80	0.47652	445.56	474.15	2.0954	0.93324	13.943	0.017778
90	0.49032	454.14	483.56	2.1217	0.94933	14.322	0.018578

Superheated/subcooled R134a Pressure 1.0 bar (T sat = -26.361)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00072593	165.37	165.44	0.86756	1.28	380.27	0.10404
g	0.19256	363.34	382.6	1.7475	0.79319	9.7687	0.0092899
-20	0.19841	367.81	387.65	1.7677	0.79505	10.028	0.0097966
-10	0.20743	374.89	395.64	1.7986	0.80353	10.432	0.010594
0	0.2163	382.1	403.73	1.8288	0.81542	10.832	0.011392
10	0.22506	389.45	411.95	1.8584	0.829	11.229	0.012191
20	0.23373	396.94	420.31	1.8874	0.84352	11.623	0.01299
30	0.24233	404.59	428.82	1.916	0.85858	12.015	0.01379
40	0.25088	412.4	437.49	1.9441	0.87396	12.404	0.014589
50	0.25938	420.37	446.3	1.9718	0.88953	12.792	0.015389
60	0.26784	428.49	455.28	1.9991	0.90521	13.177	0.016189
70	0.27626	436.78	464.41	2.0261	0.92093	13.561	0.016989
80	0.28466	445.23	473.7	2.0528	0.93667	13.944	0.017789
90	0.29303	453.84	483.14	2.0792	0.95239	14.324	0.018589

Superheated/subcooled R134a Pressure 1.4 bar (T sat = -18.76)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0007383	175.14	175.24	0.90656	1.2957	341.67	0.1005
g	0.14015	367.7	387.32	1.7402	0.82037	10.044	0.0099197
-10	0.14606	374.05	394.5	1.768	0.82081	10.404	0.010616
0	0.15263	381.37	402.74	1.7987	0.82822	10.81	0.011412
10	0.15908	388.81	411.08	1.8287	0.83912	11.211	0.012209
20	0.16544	396.37	419.53	1.858	0.85183	11.609	0.013006
30	0.17172	404.08	428.12	1.8868	0.86556	12.004	0.013805
40	0.17795	411.93	436.84	1.9151	0.87993	12.397	0.014603
50	0.18412	419.94	445.72	1.943	0.89469	12.787	0.015402
60	0.19025	428.1	454.74	1.9705	0.90971	13.175	0.016201
70	0.19635	436.42	463.91	1.9977	0.92489	13.561	0.017001
80	0.20243	444.9	473.24	2.0244	0.94016	13.945	0.0178
90	0.20847	453.53	482.72	2.0509	0.95549	14.327	0.0186
100	0.2145	462.32	492.35	2.0771	0.97083	14.708	0.0194

Superheated/subcooled R134a Pressure 1.8 bar (T sat = -12.712)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00074868	183	183.13	0.93709	1.3092	314.72	0.097723
g	0.11042	371.15	391.02	1.7353	0.8435	10.263	0.010426
-10	0.1119	373.17	393.31	1.7441	0.84172	10.376	0.010641
0	0.11722	380.62	401.72	1.7754	0.84268	10.787	0.011433
10	0.1224	388.15	410.18	1.8059	0.8501	11.194	0.012228
20	0.12748	395.79	418.73	1.8355	0.86064	11.596	0.013024
30	0.13248	403.55	427.4	1.8646	0.87287	11.995	0.013821
40	0.13742	411.46	436.19	1.8931	0.88612	12.39	0.014618
50	0.1423	419.51	445.13	1.9212	0.90001	12.783	0.015416
60	0.14715	427.71	454.2	1.9489	0.91432	13.173	0.016215
70	0.15196	436.06	463.41	1.9761	0.92893	13.56	0.017014
80	0.15674	444.56	472.78	2.003	0.94373	13.946	0.017813
90	0.16149	453.22	482.29	2.0296	0.95865	14.33	0.018612
100	0.16622	462.03	491.95	2.0558	0.97365	14.712	0.019411

Superheated/subcooled R134a Pressure 2.0 bar (T sat = -10.076)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00075337	186.45	186.6	0.95027	1.3154	303.86	0.096526
g	0.099877	372.64	392.62	1.7334	0.85404	10.359	0.010649
-10	0.099915	372.7	392.68	1.7337	0.85396	10.362	0.010655
0	0.10481	380.23	401.2	1.7654	0.85068	10.776	0.011445
10	0.10955	387.82	409.73	1.7961	0.85597	11.185	0.012239
20	0.11419	395.49	418.33	1.8259	0.86526	11.589	0.013033
30	0.11874	403.29	427.04	1.8551	0.87666	11.99	0.01383
40	0.12323	411.22	435.87	1.8838	0.8893	12.387	0.014626
50	0.12766	419.29	444.83	1.912	0.90273	12.78	0.015424
60	0.13206	427.51	453.92	1.9397	0.91668	13.172	0.016222
70	0.13642	435.88	463.16	1.967	0.93099	13.56	0.01702
80	0.14074	444.39	472.54	1.9939	0.94554	13.947	0.017819
90	0.14505	453.06	482.07	2.0206	0.96025	14.332	0.018618
100	0.14933	461.88	491.75	2.0468	0.97508	14.714	0.019417

Superheated/subcooled R134a Pressure 2.4 bar (T sat = -5.3653)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00076202	192.65	192.83	0.97364	1.327	285.63	0.094405
g	0.083906	375.3	395.44	1.7303	0.87363	10.53	0.01105
0	0.08617	379.43	400.11	1.7475	0.86861	10.755	0.011472
10	0.090262	387.13	408.79	1.7787	0.86864	11.168	0.012261
20	0.094233	394.89	417.51	1.809	0.875	11.577	0.013054
30	0.098118	402.75	426.3	1.8385	0.88454	11.98	0.013848
40	0.10193	410.74	435.2	1.8674	0.89587	12.38	0.014643
50	0.1057	418.86	444.22	1.8957	0.90831	12.777	0.015439
60	0.10942	427.11	453.37	1.9236	0.92149	13.17	0.016236
70	0.1131	435.51	462.65	1.9511	0.93517	13.561	0.017034
80	0.11675	444.06	472.08	1.9781	0.94921	13.949	0.017832
90	0.12038	452.75	481.64	2.0048	0.9635	14.335	0.01863
100	0.12398	461.59	491.35	2.0312	0.97796	14.719	0.019428

Superheated/subcooled R134a Pressure 2.8 bar (T sat = -1.2277)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00076993	198.14	198.35	0.99399	1.3377	270.75	0.092558
g	0.07236	377.62	397.89	1.7278	0.8917	10.681	0.011407
0	0.072819	378.59	398.98	1.7318	0.88968	10.733	0.011503
10	0.07646	386.42	407.83	1.7636	0.88274	11.152	0.012287
20	0.079966	394.27	416.67	1.7943	0.88548	11.564	0.013076
30	0.083378	402.21	425.55	1.8241	0.89285	11.971	0.013868
40	0.086719	410.25	434.53	1.8532	0.90271	12.374	0.014661
50	0.090003	418.41	443.61	1.8818	0.91408	12.773	0.015456
60	0.093242	426.71	452.82	1.9098	0.92644	13.169	0.016252
70	0.096443	435.14	462.14	1.9374	0.93946	13.561	0.017048
80	0.099612	443.71	471.61	1.9646	0.95296	13.951	0.017845
90	0.10275	452.43	481.2	1.9914	0.96681	14.339	0.018643
100	0.10587	461.3	490.94	2.0178	0.98089	14.724	0.019441
110	0.10897	470.31	500.82	2.044	0.99516	15.108	0.020239
120	0.11206	479.47	510.85	2.0698	1.0095	15.489	0.021037

Superheated/subcooled R134a Pressure 3.2 bar (T sat = 2.4768)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00077727	203.09	203.34	1.0121	1.3479	258.24	0.090918
g	0.063611	379.69	400.04	1.7257	0.90863	10.817	0.011731
10	0.066088	385.69	406.83	1.7501	0.89859	11.136	0.012316
20	0.069252	393.64	415.8	1.7812	0.89685	11.552	0.013101
30	0.072313	401.65	424.79	1.8113	0.90165	11.963	0.013889
40	0.075299	409.75	433.85	1.8407	0.90986	12.368	0.014681
50	0.078226	417.96	443	1.8695	0.92006	12.77	0.015474
60	0.081106	426.3	452.25	1.8977	0.93153	13.168	0.016268
70	0.083947	434.77	461.63	1.9254	0.94386	13.562	0.017063
80	0.086755	443.37	471.13	1.9527	0.9568	13.954	0.017859
90	0.089536	452.11	480.77	1.9796	0.97017	14.343	0.018656
100	0.092293	461	490.54	2.0062	0.98388	14.73	0.019453
110	0.09503	470.03	500.44	2.0324	0.99781	15.114	0.020251
120	0.097749	479.21	510.49	2.0583	1.0119	15.497	0.021049

Superheated/subcooled R134a Pressure 4.0 bar (T sat = 8.9306)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00079073	211.79	212.11	1.0433	1.367	238.03	0.088084
g	0.051207	383.24	403.72	1.7226	0.94001	11.058	0.012305
10	0.051506	384.12	404.72	1.7261	0.93718	11.104	0.012387
20	0.054214	392.32	414.01	1.7584	0.92283	11.529	0.013158
30	0.056797	400.5	423.22	1.7893	0.92102	11.947	0.013939
40	0.059293	408.73	432.45	1.8192	0.92522	12.359	0.014724
50	0.061724	417.05	441.74	1.8484	0.9327	12.765	0.015512
60	0.064104	425.47	451.11	1.877	0.94219	13.167	0.016303
70	0.066443	434.01	460.58	1.905	0.95299	13.565	0.017096
80	0.068748	442.67	470.17	1.9325	0.96472	13.96	0.01789
90	0.071023	451.47	479.88	1.9597	0.97711	14.352	0.018684
100	0.073275	460.41	489.72	1.9864	0.98999	14.742	0.01948
110	0.075505	469.48	499.68	2.0127	1.0032	15.128	0.020276
120	0.077717	478.69	509.78	2.0387	1.0168	15.513	0.021073
130	0.079914	488.05	520.02	2.0645	1.0305	15.896	0.02187
140	0.082097	497.55	530.39	2.0899	1.0444	16.277	0.022667

Superheated/subcooled R134a Pressure 5.0 bar (T sat = 15.735)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00080595	221.1	221.5	1.0759	1.3894	218.65	0.085126
g	0.041123	386.91	407.47	1.7197	0.97612	11.32	0.01293
20	0.042116	390.55	411.61	1.7339	0.96352	11.504	0.01325
30	0.044338	398.99	421.16	1.7659	0.94938	11.93	0.014014
40	0.046456	407.4	430.63	1.7967	0.94679	12.349	0.014788
50	0.048499	415.86	440.11	1.8265	0.95	12.762	0.015568
60	0.050486	424.4	449.64	1.8555	0.95652	13.169	0.016353
70	0.052427	433.04	459.25	1.8839	0.96512	13.572	0.017141
80	0.054331	441.78	468.95	1.9118	0.97514	13.97	0.017931
90	0.056205	450.65	478.76	1.9392	0.98617	14.366	0.018723
100	0.058054	459.65	488.68	1.9661	0.99794	14.758	0.019516
110	0.05988	468.78	498.72	1.9927	1.0103	15.148	0.02031
120	0.061688	478.04	508.88	2.0189	1.023	15.535	0.021105
130	0.063479	487.44	519.18	2.0447	1.0361	15.92	0.021901
140	0.065257	496.98	529.6	2.0703	1.0494	16.303	0.022697

Superheated/subcooled R134a Pressure 6.0 bar (T sat = 21.572)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
21.572	0.00081998	229.19	229.68	1.1037	1.4109	203.36	0.082608
21.572	0.0343	389.99	410.57	1.7175	1.0101	11.552	0.013487
30	0.035984	397.37	418.96	1.7455	0.98402	11.918	0.014108
40	0.037865	406.01	428.73	1.7772	0.97171	12.343	0.014865
50	0.039659	414.63	438.43	1.8077	0.96929	12.762	0.015634
60	0.041389	423.3	448.13	1.8373	0.97214	13.174	0.016411
70	0.04307	432.04	457.88	1.8661	0.97814	13.581	0.017193
80	0.04471	440.87	467.7	1.8943	0.98621	13.983	0.017978
90	0.046319	449.82	477.61	1.922	0.99571	14.382	0.018766
100	0.0479	458.88	487.62	1.9492	1.0063	14.777	0.019556
110	0.049459	468.06	497.74	1.9759	1.0176	15.169	0.020347
120	0.050998	477.37	507.97	2.0023	1.0295	15.559	0.02114
130	0.05252	486.82	518.33	2.0283	1.0418	15.945	0.021933
140	0.054027	496.39	528.81	2.054	1.0546	16.33	0.022728
150	0.055522	506.11	539.42	2.0794	1.0676	16.713	0.023523
160	0.057006	515.96	550.16	2.1045	1.0807	17.093	0.024318

Superheated/subcooled R134a Pressure 7.0 bar (T sat = 26.713)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0008332	236.41	236.99	1.128	1.4318	190.78	0.0804
g	0.029365	392.64	413.2	1.7156	1.0429	11.765	0.013997
30	0.029966	395.62	416.6	1.7269	1.0275	11.909	0.014229
40	0.031696	404.53	426.72	1.7598	1.001	12.342	0.01496
50	0.033322	413.35	436.67	1.791	0.99106	12.765	0.015712
60	0.034875	422.16	446.57	1.8212	0.98931	13.182	0.016478
70	0.036374	431.01	456.47	1.8505	0.99219	13.593	0.017251
80	0.037829	439.94	466.42	1.8791	0.998	13.999	0.01803
90	0.03925	448.97	476.44	1.907	1.0058	14.401	0.018813
100	0.040642	458.09	486.54	1.9345	1.015	14.798	0.019599
110	0.04201	467.34	496.74	1.9615	1.0252	15.193	0.020387
120	0.043358	476.7	507.05	1.988	1.0362	15.584	0.021177
130	0.044689	486.19	517.47	2.0142	1.0478	15.973	0.021969
140	0.046004	495.8	528.01	2.04	1.0599	16.359	0.022761
150	0.047307	505.55	538.67	2.0655	1.0723	16.743	0.023554
160	0.048598	515.44	549.45	2.0907	1.0851	17.125	0.024348

Superheated/subcooled R134a Pressure 8.0 bar (T sat =31.327)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00084585	242.97	243.65	1.1497	1.4527	180.11	0.078424
g	0.025625	394.96	415.46	1.714	1.075	11.965	0.014476
40	0.027036	402.97	424.59	1.7436	1.0362	12.345	0.015076
50	0.028547	412	434.84	1.7758	1.0159	12.773	0.015805
60	0.029974	420.97	444.95	1.8067	1.0083	13.194	0.016555
70	0.03134	429.96	455.03	1.8365	1.0074	13.609	0.017317
80	0.032659	438.99	465.12	1.8654	1.0106	14.018	0.018088
90	0.033942	448.1	475.25	1.8937	1.0164	14.422	0.018865
100	0.035193	457.3	485.45	1.9214	1.0241	14.822	0.019646
110	0.03642	466.6	495.74	1.9486	1.0331	15.219	0.020431
120	0.037626	476.02	506.12	1.9754	1.0431	15.612	0.021217
130	0.038813	485.55	516.6	2.0017	1.0539	16.003	0.022006
140	0.039985	495.21	527.2	2.0277	1.0653	16.39	0.022796
150	0.041144	504.99	537.91	2.0533	1.0772	16.776	0.023587
160	0.042291	514.91	548.74	2.0786	1.0895	17.159	0.02438
170	0.043427	524.96	559.7	2.1036	1.102	17.541	0.025173
180	0.044554	535.14	570.78	2.1283	1.1148	17.92	0.025967

Superheated/subcooled R134a Pressure 9.0 bar (T sat = 35.526)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00085811	249.01	249.78	1.1695	1.4736	170.87	0.076629
g	0.022687	397.01	417.43	1.7126	1.107	12.157	0.014933
40	0.023375	401.28	422.32	1.7283	1.0794	12.354	0.015223
50	0.02481	410.59	432.92	1.7616	1.0448	12.786	0.015916
60	0.026146	419.75	443.28	1.7932	1.0296	13.211	0.016644
70	0.027414	428.87	453.54	1.8236	1.0241	13.628	0.017393
80	0.02863	438.01	463.78	1.853	1.0241	14.04	0.018153
90	0.029807	447.21	474.03	1.8816	1.0277	14.446	0.018923
100	0.030951	456.48	484.34	1.9096	1.0337	14.849	0.019698
110	0.032069	465.85	494.71	1.937	1.0414	15.247	0.020478
120	0.033164	475.32	505.17	1.964	1.0504	15.642	0.021261
130	0.034241	484.91	515.72	1.9905	1.0603	16.034	0.022046
140	0.035302	494.61	526.38	2.0166	1.071	16.423	0.022834
150	0.036349	504.43	537.14	2.0423	1.0822	16.81	0.023623
160	0.037384	514.38	548.02	2.0678	1.094	17.194	0.024413
170	0.038408	524.46	559.02	2.0929	1.1061	17.577	0.025205

Superheated/subcooled R134a Pressure 10.0 bar (T sat = 39.388)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00087007	254.63	255.5	1.1876	1.4948	162.71	0.074978
g	0.020316	398.85	419.16	1.7113	1.1391	12.343	0.015374
40	0.020407	399.45	419.86	1.7135	1.134	12.37	0.01541
50	0.021796	409.09	430.88	1.7482	1.0787	12.805	0.01605
60	0.023068	418.46	441.53	1.7806	1.0535	13.232	0.016749
70	0.024262	427.74	452	1.8116	1.0423	13.652	0.017479
80	0.025399	437	462.4	1.8414	1.0387	14.065	0.018226
90	0.026493	446.3	472.79	1.8705	1.0397	14.474	0.018986
100	0.027552	455.65	483.21	1.8988	1.0438	14.878	0.019755
110	0.028584	465.09	493.67	1.9264	1.05	15.278	0.020529
120	0.029593	474.62	504.21	1.9536	1.0579	15.674	0.021307
130	0.030582	484.25	514.83	1.9803	1.0669	16.068	0.022089
140	0.031554	494	525.55	2.0065	1.0768	16.458	0.022873
150	0.032512	503.86	536.37	2.0324	1.0874	16.846	0.02366
160	0.033458	513.84	547.3	2.0579	1.0986	17.231	0.024448
170	0.034392	523.95	558.35	2.0831	1.1102	17.615	0.025238

Superheated/subcooled R134a Pressure 12.0 bar (T sat = 46.315)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.00089351	264.88	265.95	1.2201	1.5388	148.82	0.072011
g	0.016718	401.98	422.04	1.7087	1.2052	12.705	0.016233
50	0.017201	405.77	426.41	1.7223	1.1696	12.864	0.016419
60	0.018404	415.7	437.79	1.757	1.1125	13.292	0.017018
70	0.019502	425.36	448.76	1.7895	1.0849	13.713	0.01769
80	0.02053	434.9	459.53	1.8204	1.0716	14.129	0.018401
90	0.021506	444.41	470.22	1.8502	1.0662	14.54	0.019135
100	0.022443	453.94	480.87	1.8792	1.0658	14.946	0.019884
110	0.023348	463.53	491.54	1.9074	1.0686	15.348	0.020643
120	0.024228	473.18	502.25	1.935	1.0738	15.746	0.021411
130	0.025087	482.92	513.03	1.9621	1.0807	16.141	0.022183
140	0.025928	492.76	523.87	1.9886	1.0889	16.534	0.02296
150	0.026753	502.7	534.81	2.0148	1.0982	16.923	0.023741
160	0.027566	512.76	545.84	2.0405	1.1082	17.31	0.024524
170	0.028367	522.93	556.97	2.066	1.1188	17.695	0.025309
180	0.029159	533.23	568.22	2.0911	1.13	18.077	0.026095

Superheated/subcooled R134a Pressure 14.0 bar (T sat = 52.422)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
52.422	0.00091671	274.12	275.4	1.2489	1.5859	137.25	0.069382
52.422	0.01411	404.54	424.3	1.7062	1.2756	13.065	0.017085
60	0.015005	412.61	433.62	1.7345	1.1939	13.381	0.017404
70	0.01606	422.77	445.25	1.7689	1.1388	13.798	0.017972
80	0.017023	432.65	456.48	1.8012	1.111	14.212	0.018622
90	0.017923	442.42	467.52	1.832	1.0968	14.622	0.019317
100	0.018778	452.16	478.45	1.8617	1.0905	15.028	0.020039
110	0.019597	461.9	489.34	1.8905	1.0891	15.43	0.020778
120	0.020388	471.7	500.24	1.9186	1.0911	15.829	0.02153
130	0.021156	481.55	511.17	1.946	1.0956	16.225	0.022291
140	0.021904	491.49	522.16	1.973	1.1019	16.618	0.023058
150	0.022636	501.52	533.21	1.9994	1.1095	17.008	0.023831
160	0.023355	511.65	544.35	2.0254	1.1182	17.396	0.024607
170	0.024061	521.89	555.58	2.051	1.1278	17.781	0.025387
180	0.024758	532.25	566.91	2.0763	1.138	18.165	0.026169
170	0.028849	487.94	528.33	2.0067	0.84471	18.973	0.021052

Superheated/subcooled R134a Pressure 16.0 bar (T sat = 57.906)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0009401	282.61	284.11	1.2748	1.6375	127.31	0.067005
g	0.012126	406.64	426.04	1.7036	1.3527	13.433	0.017958
60	0.012373	409.04	428.84	1.712	1.3161	13.515	0.017991
70	0.01343	419.91	441.4	1.7491	1.2101	13.915	0.018359
80	0.014362	430.24	453.22	1.7831	1.1594	14.319	0.018908
90	0.015216	440.32	464.66	1.815	1.1327	14.724	0.019543
100	0.016015	450.29	475.91	1.8456	1.1185	15.126	0.020225
110	0.016773	460.22	487.06	1.8751	1.1118	15.526	0.020936
120	0.0175	470.16	498.16	1.9037	1.1101	15.924	0.021668
130	0.018201	480.15	509.27	1.9316	1.1117	16.319	0.022413
140	0.018882	490.19	520.4	1.9589	1.1157	16.711	0.023168
150	0.019546	500.32	531.59	1.9856	1.1216	17.101	0.023931
160	0.020194	510.53	542.84	2.0119	1.1288	17.489	0.024699
170	0.02083	520.84	554.17	2.0378	1.1372	17.874	0.025472
180	0.021456	531.26	565.59	2.0632	1.1464	18.258	0.026248

Saturation temperature tables

T (c)	P(bar)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (µPa*s)	μ_g (µPa*s)	k_f (W/m*K)	k_g (W/m*K)
-50	0.40836	0.001424	2.6277	118.37	1427	118.43	1534.3	0.56609	6.9112	0.051107	328.87	7.5729	0.72228	0.020238
-45	0.54489	0.001436	2.0071	140.23	1433.4	140.31	1542.7	0.66297	6.81	0.049172	303.52	7.7148	0.70512	0.020427
-40	0.71692	0.001449	1.5533	162.22	1439.6	162.32	1550.9	0.75832	6.7141	0.047262	281.24	7.8588	0.68811	0.020641
-36	0.88447	0.001459	1.2765	179.91	1444.4	180.03	1557.3	0.83353	6.641	0.045753	265.31	7.9752	0.67463	0.020832
-32	1.0826	0.00147	1.0567	197.67	1449	197.83	1563.4	0.90782	6.5708	0.04426	250.83	8.0926	0.66127	0.021039
-31	1.1373	0.001473	1.0091	202.12	1450.2	202.29	1565	0.92625	6.5536	0.043889	247.41	8.1221	0.65794	0.021094
-30	1.1943	0.001475	0.96396	206.58	1451.3	206.76	1566.5	0.94462	6.5367	0.043519	244.07	8.1516	0.65463	0.021149
-28	1.3151	0.001481	0.88082	215.51	1453.6	215.71	1569.4	0.9812	6.5033	0.042783	237.62	8.2108	0.64803	0.021264
-26	1.4457	0.001486	0.80614	224.46	1455.8	224.68	1572.4	1.0176	6.4705	0.042051	231.44	8.2702	0.64146	0.021383
-22	1.7379	0.001498	0.6784	242.41	1460.2	242.67	1578.1	1.0896	6.4067	0.040599	219.85	8.3896	0.62843	0.021635
-20	1.9008	0.001504	0.62373	251.42	1462.3	251.71	1580.8	1.1253	6.3757	0.039879	214.41	8.4495	0.62196	0.021768
-18	2.0756	0.001509	0.57428	260.44	1464.3	260.76	1583.5	1.1609	6.3452	0.039163	209.19	8.5095	0.61553	0.021905
-16	2.263	0.001515	0.52949	269.48	1466.4	269.83	1586.2	1.1962	6.3153	0.038452	204.17	8.5697	0.60913	0.022047
-14	2.4637	0.001521	0.48885	278.54	1468.4	278.92	1588.8	1.2313	6.2859	0.037744	199.34	8.6301	0.60276	0.022194
-12	2.6782	0.001527	0.45192	287.62	1470.3	288.03	1591.4	1.2662	6.2569	0.037041	194.69	8.6905	0.59644	0.022346
-11	2.7908	0.001531	0.43472	292.17	1471.3	292.6	1592.6	1.2835	6.2426	0.036691	192.44	8.7208	0.59329	0.022424
-10	2.9071	0.001534	0.4183	296.72	1472.3	297.16	1593.9	1.3009	6.2285	0.036342	190.22	8.7511	0.59014	0.022503
-8	3.1513	0.00154	0.38767	305.83	1474.1	306.32	1596.3	1.3354	6.2004	0.035648	185.91	8.8118	0.58389	0.022665
-6	3.4114	0.001546	0.3597	314.97	1476	315.49	1598.7	1.3697	6.1729	0.034957	181.74	8.8726	0.57766	0.022832
-4	3.688	0.001553	0.33414	324.12	1477.7	324.69	1601	1.4038	6.1457	0.034271	177.73	8.9336	0.57147	0.023004
-2	3.9819	0.001559	0.31074	333.29	1479.5	333.91	1603.2	1.4378	6.119	0.033589	173.85	8.9947	0.56532	0.023182
0	4.2938	0.001566	0.2893	342.48	1481.2	343.15	1605.4	1.4716	6.0926	0.032912	170.09	9.0558	0.5592	0.023365
2	4.6246	0.001573	0.26962	351.69	1482.8	352.42	1607.5	1.5052	6.0667	0.032239	166.46	9.1172	0.55312	0.023554
4	4.9748	0.00158	0.25153	360.92	1484.4	361.71	1609.6	1.5386	6.041	0.03157	162.94	9.1786	0.54707	0.023748
6	5.3453	0.001587	0.23489	370.17	1486	371.02	1611.5	1.5719	6.0158	0.030905	159.54	9.2402	0.54105	0.023948
8	5.737	0.001594	0.21956	379.44	1487.5	380.36	1613.4	1.605	5.9908	0.030245	156.24	9.3019	0.53507	0.024153
10	6.1505	0.001601	0.20543	388.74	1488.9	389.72	1615.3	1.638	5.9662	0.029589	153.03	9.3638	0.52912	0.024365
12	6.5866	0.001608	0.19237	398.05	1490.3	399.11	1617	1.6708	5.9419	0.028937	149.92	9.4259	0.5232	0.024583
16	7.5303	0.001623	0.16914	416.74	1493	417.97	1620.3	1.7359	5.8941	0.027648	143.96	9.5505	0.51147	0.025038
20	8.5748	0.001639	0.1492	435.53	1495.4	436.94	1623.3	1.8005	5.8475	0.026376	138.32	9.6761	0.49986	0.025519
24	9.7268	0.001655	0.13201	454.42	1497.6	456.03	1626	1.8645	5.8017	0.025122	132.98	9.8028	0.48837	0.026027
28	10.993	0.001672	0.11714	473.41	1499.5	475.25	1628.3	1.9281	5.7569	0.023887	127.9	9.9307	0.477	0.026566
32	12.382	0.001689	0.10422	492.52	1501.2	494.61	1630.3	1.9911	5.7128	0.02267	123.06	10.06	0.46574	0.027135
36	13.9	0.001707	0.092957	511.75	1502.6	514.12	1631.9	2.0538	5.6693	0.021471	118.45	10.192	0.45459	0.027739
40	15.554	0.001726	0.083101	531.11	1503.8	533.79	1633.1	2.1161	5.6265	0.020292	114.04	10.325	0.44354	0.028379
44	17.353	0.001745	0.074446	550.61	1504.7	553.64	1633.9	2.1781	5.5841	0.019131	109.81	10.462	0.43258	0.029058
46	18.31	0.001756	0.070515	560.42	1505	563.63	1634.1	2.209	5.5631	0.018558	107.76	10.531	0.42714	0.029414
50	20.34	0.001777	0.06335	580.16	1505.4	583.77	1634.2	2.2706	5.5213	0.017427	103.79	10.673	0.41632	0.03016

Saturation pressure tables

P (bar)	T (c)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (µPa*s)	μ_g (µPa*s)	k_f (W/m*K)	k_g (W/m*K)
0.4009	-50.311	0.001424	2.6734	117.01	1426.6	117.07	1533.8	0.56	6.9177	0.05123	330.56	7.5641	0.72335	0.020227
0.5009	-46.486	0.001433	2.1713	133.72	1431.5	133.79	1540.3	0.63434	6.8395	0.04974	310.7	7.6724	0.7102	0.020368
0.6009	-43.245	0.001441	1.8318	147.93	1435.6	148.02	1545.6	0.6966	6.7758	0.0485	295.38	7.7651	0.69913	0.020499
0.7009	-40.421	0.001448	1.5864	160.36	1439	160.46	1550.2	0.75034	6.722	0.04742	283.01	7.8466	0.68953	0.020622
0.8009	-37.91	0.001454	1.4006	171.45	1442.1	171.57	1554.3	0.79774	6.6755	0.04647	272.72	7.9195	0.68105	0.020739
0.9009	-35.642	0.00146	1.2547	181.49	1444.8	181.62	1557.8	0.84022	6.6346	0.04562	263.96	7.9857	0.67343	0.020849
1.0009	-33.57	0.001466	1.1371	190.69	1447.2	190.83	1561	0.87876	6.598	0.04484	256.35	8.0464	0.6665	0.020956
1.2	-29.902	0.001476	0.95967	207.02	1451.5	207.2	1566.6	0.94642	6.535	0.04348	243.75	8.1545	0.65431	0.021155
1.4	-26.682	0.001484	0.83074	221.4	1455.1	221.61	1571.4	1.0052	6.4816	0.0423	233.52	8.2499	0.6437	0.021342
1.6	-23.814	0.001493	0.73307	234.26	1458.2	234.5	1575.5	1.057	6.4353	0.04126	224.98	8.3354	0.63432	0.021518
1.8	-21.221	0.0015	0.65644	245.92	1461	246.19	1579.1	1.1036	6.3946	0.04032	217.7	8.4129	0.6259	0.021686
2	-18.848	0.001507	0.59465	256.61	1463.5	256.92	1582.4	1.1458	6.3581	0.03947	211.37	8.4841	0.61825	0.021846
2.2	-16.658	0.001513	0.54374	266.51	1465.7	266.84	1585.3	1.1846	6.3251	0.03869	205.79	8.5499	0.61123	0.022
2.4	-14.62	0.001519	0.50104	275.73	1467.8	276.1	1588	1.2204	6.2949	0.03796	200.82	8.6113	0.60473	0.022148
2.6	-12.714	0.001525	0.46469	284.38	1469.6	284.78	1590.5	1.2537	6.2672	0.03729	196.33	8.6689	0.59869	0.022291
2.8	-10.92	0.001531	0.43337	292.53	1471.4	292.96	1592.7	1.2849	6.2415	0.03666	192.26	8.7232	0.59303	0.02243
3	-9.2243	0.001536	0.40608	300.25	1473	300.71	1594.8	1.3143	6.2175	0.03607	188.53	8.7746	0.58771	0.022565
3.2	-7.6159	0.001541	0.3821	307.59	1474.5	308.08	1596.8	1.342	6.1951	0.03552	185.1	8.8235	0.58269	0.022697
3.4	-6.0848	0.001546	0.36084	314.58	1475.9	315.11	1598.6	1.3683	6.174	0.03499	181.92	8.8701	0.57793	0.022825
3.6	-4.6229	0.001551	0.34186	321.27	1477.2	321.83	1600.3	1.3932	6.1541	0.03448	178.96	8.9146	0.5734	0.02295
3.8	-3.2235	0.001555	0.32481	327.68	1478.4	328.27	1601.8	1.4171	6.1353	0.03401	176.2	8.9573	0.56908	0.023073
4	-1.8807	0.00156	0.30941	333.84	1479.6	334.46	1603.3	1.4398	6.1174	0.03355	173.62	8.9983	0.56495	0.023193
4.2	-0.5894	0.001564	0.29543	339.77	1480.7	340.43	1604.8	1.4617	6.1004	0.03311	171.19	9.0378	0.561	0.023311
4.4	0.65468	0.001568	0.28267	345.49	1481.7	346.18	1606.1	1.4826	6.0841	0.03269	168.89	9.0759	0.55721	0.023426
4.6	1.8554	0.001572	0.27098	351.03	1482.7	351.75	1607.4	1.5028	6.0685	0.03229	166.72	9.1127	0.55356	0.02354
4.8	3.016	0.001576	0.26024	356.38	1483.6	357.14	1608.6	1.5222	6.0536	0.0319	164.66	9.1483	0.55004	0.023652
5	4.1396	0.00158	0.25032	361.57	1484.5	362.36	1609.7	1.541	6.0393	0.03152	162.7	9.1829	0.54665	0.023762
6	9.2846	0.001598	0.21035	385.41	1488.4	386.37	1614.6	1.6262	5.975	0.02982	154.17	9.3416	0.53124	0.024289
7	13.803	0.001615	0.18145	406.47	1491.5	407.6	1618.6	1.7002	5.9202	0.02835	147.19	9.482	0.5179	0.024785
8	17.848	0.00163	0.15955	425.41	1494.1	426.72	1621.7	1.7658	5.8724	0.02706	141.32	9.6084	0.50609	0.025256
9	21.522	0.001645	0.14236	442.71	1496.2	444.19	1624.4	1.8249	5.8299	0.0259	136.26	9.7242	0.49547	0.025709
10	24.895	0.001659	0.1285	458.66	1498	460.32	1626.5	1.8788	5.7916	0.02484	131.82	9.8313	0.48581	0.026145
12	30.935	0.001684	0.10749	487.42	1500.8	489.44	1629.8	1.9744	5.7244	0.02299	124.33	10.026	0.46872	0.02698
14	36.253	0.001708	0.092296	512.96	1502.7	515.36	1631.9	2.0578	5.6666	0.0214	118.16	10.2	0.45389	0.027778
16	41.022	0.001731	0.080782	536.08	1504.1	538.85	1633.3	2.132	5.6156	0.01999	112.94	10.36	0.44073	0.028548
18	45.361	0.001752	0.071744	557.28	1504.9	560.44	1634	2.1992	5.5698	0.01874	108.41	10.509	0.42888	0.029299
20	49.351	0.001773	0.064453	576.95	1505.3	580.49	1634.2	2.2606	5.5281	0.01761	104.42	10.65	0.41807	0.030036

Superheated/subcooled Ammonia Pressure 0.4 bar (T sat = -50.349)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0014235	116.85	116.9	0.55926	4.3579	330.77	0.72348
g	2.679	1426.6	1533.7	6.9185	2.1758	7.5631	0.020226
-50	2.6836	1427.2	1534.5	6.9219	2.1743	7.5737	0.020237
-45	2.7479	1435.4	1545.3	6.9699	2.1562	7.7271	0.020405
-40	2.8118	1443.6	1556.1	7.0165	2.1418	7.8833	0.020594
-35	2.8753	1451.7	1566.8	7.0618	2.1304	8.0422	0.020804
-30	2.9386	1459.8	1577.4	7.1059	2.1217	8.2036	0.021035
-25	3.0017	1467.9	1588	7.1491	2.1152	8.3674	0.021286
-20	3.0645	1476	1598.5	7.1912	2.1106	8.5335	0.021558
-15	3.1271	1484	1609.1	7.2325	2.1075	8.7016	0.021849
-10	3.1896	1492	1619.6	7.2729	2.1059	8.8718	0.02216
-5	3.252	1500.1	1630.1	7.3125	2.1054	9.0438	0.02249
0	3.3142	1508.1	1640.7	7.3514	2.106	9.2176	0.02284
5	3.3763	1516.1	1651.2	7.3896	2.1074	9.393	0.023208

Superheated/subcooled Ammonia Pressure 0.6 bar (T sat = -43.272)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0014407	147.81	147.9	0.69608	4.3964	295.5	0.69922
g	1.8344	1435.5	1545.6	6.7763	2.2208	7.7644	0.020498
-40	1.8629	1441.1	1552.8	6.8076	2.2055	7.8679	0.020624
-35	1.9062	1449.4	1563.8	6.8541	2.1858	8.0281	0.020833
-30	1.9491	1457.8	1574.7	6.8994	2.1701	8.1907	0.021063
-25	1.9919	1466	1585.5	6.9434	2.1576	8.3556	0.021314
-20	2.0344	1474.2	1596.3	6.9864	2.1479	8.5226	0.021585
-15	2.0767	1482.4	1607	7.0283	2.1406	8.6916	0.021875
-10	2.1189	1490.6	1617.7	7.0693	2.1352	8.8625	0.022186
-5	2.1609	1498.7	1628.4	7.1095	2.1316	9.0352	0.022515
0	2.2028	1506.8	1639	7.1488	2.1294	9.2096	0.022864
5	2.2446	1515	1649.7	7.1874	2.1285	9.3856	0.023232

Superheated/subcooled Ammonia Pressure 0.8 bar (T sat = -37.931)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0014543	171.36	171.47	0.79734	4.4244	272.81	0.68112
g	1.402	1442.1	1554.2	6.6759	2.2597	7.9189	0.020738
-35	1.4214	1447.1	1560.8	6.7038	2.2436	8.0139	0.020862
-30	1.4543	1455.6	1572	6.7502	2.2204	8.1777	0.021092
-25	1.4869	1464.1	1583	6.7952	2.2016	8.3436	0.021342
-20	1.5193	1472.5	1594	6.8389	2.1865	8.5116	0.021612
-15	1.5515	1480.8	1604.9	6.8816	2.1746	8.6814	0.021902
-10	1.5835	1489.1	1615.8	6.9232	2.1654	8.8531	0.022212
-5	1.6154	1497.3	1626.6	6.9639	2.1584	9.0266	0.022541
0	1.6471	1505.6	1637.3	7.0037	2.1533	9.2016	0.022889
5	1.6787	1513.8	1648.1	7.0427	2.1499	9.3782	0.023257
10	1.7103	1522	1658.8	7.081	2.148	9.5563	0.023643
15	1.7417	1530.2	1669.6	7.1186	2.1473	9.7357	0.024047
20	1.7731	1538.5	1680.3	7.1555	2.1476	9.9165	0.02447

Superheated/subcooled Ammonia Pressure 1.0 bar (T sat = -33.588)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
-35	0.0014619	184.34	184.48	0.85217	4.4394	261.57	0.67128
f	0.0014656	190.61	190.75	0.87843	4.4465	256.42	0.66656
g	1.1381	1447.2	1561	6.5983	2.2947	8.0459	0.020955
-30	1.1573	1453.5	1569.2	6.6322	2.2728	8.1645	0.021121
-25	1.1838	1462.1	1580.5	6.6782	2.2472	8.3316	0.02137
-20	1.2102	1470.7	1591.7	6.7229	2.2264	8.5005	0.021639
-15	1.2363	1479.2	1602.8	6.7662	2.2097	8.6713	0.021929
-10	1.2622	1487.6	1613.8	6.8085	2.1964	8.8437	0.022238
-5	1.288	1495.9	1624.7	6.8497	2.1859	9.0179	0.022567
0	1.3136	1504.3	1635.7	6.89	2.1778	9.1936	0.022915
5	1.3392	1512.6	1646.5	6.9295	2.1719	9.3708	0.023282
10	1.3646	1520.9	1657.4	6.9681	2.1677	9.5494	0.023667
15	1.39	1529.2	1668.2	7.0061	2.165	9.7293	0.024071
20	1.4153	1537.5	1679	7.0433	2.1637	9.9105	0.024493

Superheated/subcooled Ammonia Pressure 1.5 bar (T sat = -25.21)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0014885	228	228.22	1.0319	4.4882	229.07	0.63888
g	0.77876	1456.7	1573.5	6.4577	2.3709	8.2938	0.021431
-25	0.77953	1457.1	1574	6.4597	2.3692	8.3009	0.021442
-20	0.79779	1466.1	1585.8	6.5066	2.3324	8.4724	0.02171
-15	0.81583	1475	1597.3	6.5519	2.3023	8.6455	0.021997
-10	0.83369	1483.7	1608.8	6.5958	2.2777	8.82	0.022305
-5	0.85138	1492.4	1620.1	6.6385	2.2577	8.996	0.022632
0	0.86894	1501	1631.4	6.6801	2.2416	9.1734	0.022979
5	0.88637	1509.6	1642.5	6.7206	2.2287	9.3521	0.023344
10	0.9037	1518.1	1653.7	6.7602	2.2185	9.532	0.023729
15	0.92094	1526.6	1664.7	6.799	2.2107	9.7133	0.024131
20	0.9381	1535.1	1675.8	6.8369	2.2049	9.8956	0.024552
25	0.95519	1543.5	1686.8	6.8742	2.2008	10.079	0.024991
30	0.97221	1551.9	1697.8	6.9108	2.1982	10.264	0.025447

Superheated/subcooled Ammonia Pressure 2.0 bar (T sat = -18.848)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0015068	256.61	256.92	1.1458	4.5195	211.37	0.61825
g	0.59465	1463.5	1582.4	6.3581	2.4371	8.4841	0.021846
-15	0.60544	1470.6	1591.7	6.3944	2.4026	8.6192	0.022068
-10	0.61929	1479.8	1603.6	6.4401	2.3651	8.7959	0.022374
-5	0.63296	1488.8	1615.4	6.4844	2.3344	8.9738	0.022699
0	0.64649	1497.7	1627	6.5272	2.3092	9.1529	0.023044
5	0.65988	1506.5	1638.5	6.5689	2.2886	9.3332	0.023408
10	0.67317	1515.2	1649.9	6.6096	2.2718	9.5146	0.023791
15	0.68636	1523.9	1661.2	6.6492	2.2584	9.6971	0.024193
20	0.69947	1532.6	1672.5	6.688	2.2477	9.8806	0.024612
25	0.7125	1541.2	1683.7	6.7259	2.2395	10.065	0.02505
30	0.72546	1549.8	1694.9	6.7631	2.2332	10.251	0.025505

Superheated/subcooled Ammonia Pressure 2.5 bar (T sat = -13.652)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0015224	280.12	280.5	1.2373	4.5452	198.52	0.60166
g	0.48216	1468.7	1589.3	6.2808	2.4967	8.6406	0.02222
-10	0.49052	1475.7	1598.3	6.3154	2.4594	8.7714	0.022444
-5	0.50181	1485	1610.5	6.3613	2.4163	8.9513	0.022768
0	0.51293	1494.3	1622.5	6.4056	2.3809	9.1322	0.023111
5	0.52392	1503.3	1634.3	6.4485	2.3518	9.3141	0.023474
10	0.53479	1512.3	1646	6.4902	2.3279	9.497	0.023855
15	0.54556	1521.2	1657.6	6.5308	2.3083	9.6808	0.024255
20	0.55625	1530	1669.1	6.5703	2.2924	9.8656	0.024673
25	0.56685	1538.8	1680.5	6.609	2.2796	10.051	0.02511
30	0.57739	1547.6	1691.9	6.6468	2.2694	10.238	0.025564
35	0.58786	1556.3	1703.2	6.6839	2.2615	10.425	0.026035
40	0.59828	1565	1714.5	6.7202	2.2556	10.613	0.026523
45	0.60865	1573.6	1725.8	6.7559	2.2514	10.802	0.027028

Superheated/subcooled Ammonia Pressure 3.0 bar (T sat = -9.2243)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.001536	300.25	300.71	1.3143	4.5675	188.53	0.58771
g	0.40608	1473	1594.8	6.2175	2.5518	8.7746	0.022565
-5	0.41428	1481.2	1605.5	6.2577	2.5042	8.9285	0.022838
0	0.42382	1490.7	1617.9	6.3035	2.4573	9.1113	0.02318
5	0.43322	1500.1	1630.1	6.3477	2.4186	9.2949	0.02354
10	0.44249	1509.3	1642.1	6.3905	2.3867	9.4793	0.02392
15	0.45165	1518.5	1653.9	6.432	2.3605	9.6644	0.024319
20	0.46073	1527.5	1665.7	6.4725	2.3388	9.8504	0.024736
25	0.46972	1536.4	1677.3	6.5119	2.3212	10.037	0.02517
30	0.47864	1545.3	1688.9	6.5503	2.3068	10.225	0.025623
35	0.4875	1554.2	1700.4	6.588	2.2953	10.413	0.026093
40	0.4963	1563	1711.9	6.6248	2.2862	10.602	0.02658
45	0.50505	1571.8	1723.3	6.661	2.2793	10.792	0.027084

Superheated/subcooled Ammonia Pressure 3.5 bar (T sat = -5.3457)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0015484	317.96	318.5	1.3809	4.5877	180.41	0.57563
g	0.35109	1476.5	1599.4	6.1639	2.6034	8.8926	0.022888
0	0.3601	1487.1	1613.2	6.2147	2.5387	9.0901	0.02325
10	0.37651	1506.3	1638.1	6.3043	2.4487	9.4614	0.023987
20	0.39247	1524.9	1662.2	6.3882	2.3873	9.8352	0.024799
30	0.40809	1543	1685.9	6.4675	2.3455	10.212	0.025684
40	0.42344	1561	1709.2	6.5432	2.3178	10.591	0.026639
50	0.43859	1578.8	1732.3	6.6157	2.3002	10.972	0.027661
60	0.45358	1596.5	1755.2	6.6856	2.2902	11.356	0.028747
70	0.46843	1614.1	1778.1	6.7533	2.2861	11.742	0.029895
80	0.48317	1631.8	1801	6.819	2.2864	12.129	0.031101
90	0.49783	1649.6	1823.8	6.8829	2.2903	12.517	0.032362
100	0.5124	1667.4	1846.8	6.9452	2.2971	12.907	0.033676
120	0.54137	1703.4	1892.9	7.0656	2.3172	13.689	0.036446
140	0.57014	1740	1939.5	7.1812	2.3438	14.473	0.039382
160	0.59877	1777.1	1986.7	7.2927	2.375	15.257	0.04245
180	0.62728	1815	2034.5	7.4007	2.4095	16.04	0.045626
200	0.65571	1853.6	2083.1	7.5055	2.4467	16.822	0.048875

Superheated/subcooled Ammonia Pressure 4.0 bar (T sat = -1.8807)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0015597	333.84	334.46	1.4398	4.6062	173.62	0.56495
g	0.30941	1479.6	1603.3	6.1174	2.6523	8.9983	0.023193
0	0.31225	1483.4	1608.3	6.1356	2.6258	9.0686	0.023322
10	0.32699	1503.2	1634	6.2279	2.5141	9.4433	0.024055
20	0.34125	1522.2	1658.7	6.3138	2.4379	9.82	0.024863
30	0.35515	1540.7	1682.8	6.3946	2.3856	10.199	0.025745
40	0.36878	1559	1706.5	6.4714	2.3502	10.58	0.026698
50	0.3822	1577	1729.9	6.5449	2.3269	10.963	0.027717
60	0.39545	1594.9	1753	6.6156	2.3125	11.348	0.028801
70	0.40857	1612.7	1776.1	6.6839	2.3049	11.735	0.029947
80	0.42158	1630.5	1799.2	6.75	2.3025	12.123	0.031152
90	0.43449	1648.4	1822.2	6.8143	2.3043	12.512	0.032412
100	0.44732	1666.3	1845.3	6.877	2.3093	12.903	0.033724
120	0.47281	1702.5	1891.6	6.998	2.3267	13.686	0.036492
140	0.4981	1739.1	1938.4	7.114	2.3513	14.471	0.039426
160	0.52324	1776.4	1985.7	7.2258	2.3811	15.256	0.042491
180	0.54827	1814.3	2033.6	7.3341	2.4146	16.04	0.045665
200	0.5732	1853	2082.3	7.4391	2.4509	16.822	0.048911

Superheated/subcooled Ammonia Pressure 4.5 bar (T sat = 1.2602)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0015702	348.28	348.99	1.4928	4.6236	167.79	0.55536
g	0.2767	1482.2	1606.7	6.0762	2.6989	9.0945	0.023483
10	0.28843	1500	1629.8	6.1589	2.5831	9.4251	0.024124
20	0.30138	1519.5	1655.1	6.2469	2.4907	9.8046	0.024929
30	0.31396	1538.4	1679.7	6.3293	2.4272	10.186	0.025808
40	0.32625	1556.9	1703.7	6.4073	2.3836	10.569	0.026757
50	0.33833	1575.2	1727.4	6.4818	2.3542	10.953	0.027775
60	0.35024	1593.2	1750.9	6.5532	2.3353	11.34	0.028857
70	0.36201	1611.2	1774.1	6.6221	2.3241	11.728	0.030001
80	0.37366	1629.2	1797.4	6.6888	2.3189	12.117	0.031203
90	0.38522	1647.2	1820.5	6.7535	2.3184	12.507	0.032462
100	0.39671	1665.2	1843.7	6.8165	2.3215	12.898	0.033773
120	0.41948	1701.5	1890.3	6.9381	2.3362	13.683	0.036539
140	0.44206	1738.3	1937.2	7.0545	2.3589	14.469	0.039471
160	0.46449	1775.7	1984.7	7.1667	2.3872	15.255	0.042533
180	0.48681	1813.7	2032.8	7.2751	2.4196	16.039	0.045704
200	0.50904	1852.4	2081.5	7.3804	2.4552	16.822	0.048948

Superheated/subcooled Ammonia Pressure 5.0 bar (T sat = 4.1396)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0015801	361.57	362.36	1.541	4.6401	162.7	0.54665
g	0.25032	1484.5	1609.7	6.0393	2.7437	9.1829	0.023762
10	0.25754	1496.7	1625.5	6.0957	2.656	9.4068	0.024195
20	0.26946	1516.7	1651.5	6.1859	2.5459	9.7892	0.024996
30	0.28099	1536	1676.5	6.2699	2.4703	10.173	0.025872
40	0.29222	1554.9	1701	6.3492	2.418	10.558	0.026818
50	0.30323	1573.3	1725	6.4246	2.3823	10.944	0.027833
60	0.31406	1591.6	1748.6	6.4968	2.3585	11.332	0.028913
70	0.32475	1609.8	1772.2	6.5663	2.3436	11.721	0.030055
80	0.33533	1627.9	1795.5	6.6335	2.3355	12.111	0.031256
90	0.34581	1646	1818.9	6.6987	2.3327	12.502	0.032513
100	0.35621	1664.1	1842.2	6.7621	2.3339	12.894	0.033822
120	0.37682	1700.6	1889	6.8842	2.3458	13.68	0.036587
140	0.39723	1737.5	1936.1	7.0011	2.3665	14.467	0.039516
160	0.41749	1774.9	1983.7	7.1135	2.3934	15.254	0.042575
180	0.43764	1813	2031.9	7.2223	2.4247	16.039	0.045743
200	0.4577	1851.9	2080.7	7.3277	2.4594	16.822	0.048985

Superheated/subcooled Ammonia Pressure 5.5 bar (T sat = 6.803)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0015895	373.89	374.77	1.5852	4.6559	158.2	0.53865
g	0.22859	1486.6	1612.3	6.0057	2.787	9.2649	0.02403
10	0.23224	1493.4	1621.1	6.0371	2.7334	9.3882	0.024268
20	0.24332	1513.9	1647.8	6.1295	2.6037	9.7737	0.025065
30	0.25399	1533.6	1673.3	6.2153	2.515	10.16	0.025936
40	0.26436	1552.8	1698.2	6.2959	2.4535	10.546	0.02688
50	0.2745	1571.5	1722.5	6.3723	2.411	10.934	0.027892
60	0.28445	1590	1746.4	6.4453	2.3822	11.324	0.028969
70	0.29426	1608.3	1770.1	6.5155	2.3635	11.714	0.030109
80	0.30396	1626.5	1793.7	6.5832	2.3524	12.105	0.031309
90	0.31355	1644.8	1817.2	6.6488	2.3472	12.497	0.032564
100	0.32307	1663	1840.7	6.7125	2.3465	12.89	0.033872
120	0.34191	1699.6	1887.7	6.8352	2.3554	13.677	0.036635
140	0.36055	1736.7	1935	6.9525	2.3741	14.465	0.039562
160	0.37904	1774.2	1982.7	7.0653	2.3996	15.253	0.042617
180	0.39741	1812.4	2031	7.1743	2.4299	16.039	0.045783
200	0.4157	1851.3	2079.9	7.28	2.4637	16.822	0.049023

Superheated/subcooled Ammonia Pressure 6.0 bar (T sat = 9.2846)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0015983	385.41	386.37	1.6262	4.6712	154.17	0.53124
g	0.21035	1488.4	1614.6	5.975	2.8289	9.3416	0.024289
10	0.21112	1490	1616.6	5.9821	2.8156	9.3695	0.024342
20	0.22151	1511.1	1644	6.0771	2.6643	9.7581	0.025134
30	0.23148	1531.2	1670.1	6.1646	2.5614	10.146	0.026002
40	0.24113	1550.6	1695.3	6.2465	2.4901	10.535	0.026943
50	0.25055	1569.6	1720	6.324	2.4405	10.925	0.027952
60	0.25977	1588.3	1744.2	6.3978	2.4064	11.316	0.029027
70	0.26885	1606.8	1768.1	6.4686	2.3837	11.707	0.030165
80	0.27781	1625.2	1791.9	6.5369	2.3695	12.099	0.031362
90	0.28667	1643.5	1815.5	6.6029	2.3618	12.492	0.032616
100	0.29545	1661.9	1839.1	6.667	2.3592	12.886	0.033923
120	0.31282	1698.7	1886.4	6.7903	2.3652	13.674	0.036684
140	0.32998	1735.8	1933.8	6.908	2.3818	14.463	0.039609
160	0.34699	1773.5	1981.7	7.0212	2.4058	15.252	0.04266
180	0.36389	1811.7	2030.1	7.1304	2.435	16.038	0.045823
190	0.3723	1831.1	2054.5	7.1837	2.4511	16.431	0.047434
200	0.3807	1850.7	2079.1	7.2363	2.468	16.822	0.04906

Superheated/subcooled Ammonia Pressure 7.0 bar (T sat = 13.803)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.001615	406.47	407.6	1.7002	4.7006	147.19	0.5179
g	0.18145	1491.5	1618.6	5.9202	2.9095	9.482	0.024785
20	0.18718	1505.2	1636.2	5.9811	2.7947	9.7266	0.025278
30	0.19606	1526.2	1663.4	6.0725	2.6597	10.12	0.026138
40	0.2046	1546.3	1689.5	6.1572	2.5667	10.513	0.027071
50	0.21289	1565.8	1714.9	6.2368	2.5018	10.906	0.028074
60	0.22097	1585	1739.6	6.3123	2.4565	11.3	0.029144
70	0.22891	1603.8	1764	6.3845	2.4253	11.694	0.030278
80	0.23672	1622.5	1788.2	6.4538	2.4046	12.088	0.031471
90	0.24443	1641.1	1812.2	6.5208	2.3917	12.483	0.032722
100	0.25205	1659.6	1836	6.5857	2.385	12.878	0.034026
120	0.2671	1696.7	1883.7	6.7101	2.3849	13.669	0.036783
140	0.28194	1734.2	1931.5	6.8287	2.3974	14.46	0.039704
160	0.29664	1772	1979.7	6.9425	2.4184	15.25	0.042746
180	0.31121	1810.5	2028.3	7.0523	2.4453	16.038	0.045903
200	0.32569	1849.5	2077.5	7.1585	2.4767	16.823	0.049136

Superheated/subcooled Ammonia Pressure 8.0 bar (T sat = 17.848)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0016304	425.41	426.72	1.7658	4.7289	141.32	0.50609
g	0.15955	1494.1	1621.7	5.8724	2.9865	9.6084	0.025256
20	0.16135	1499	1628.1	5.8943	2.9392	9.6947	0.025429
30	0.16945	1521	1656.6	5.9898	2.7663	10.094	0.026278
40	0.17717	1541.9	1683.6	6.0775	2.6485	10.491	0.027204
50	0.18461	1562	1709.7	6.1594	2.5665	10.888	0.0282
60	0.19185	1581.6	1735	6.2367	2.5088	11.284	0.029265
70	0.19893	1600.8	1759.9	6.3103	2.4684	11.68	0.030393
80	0.20588	1619.7	1784.4	6.3808	2.4407	12.077	0.031583
90	0.21273	1638.6	1808.8	6.4487	2.4225	12.474	0.03283
100	0.21949	1657.3	1832.9	6.5143	2.4114	12.87	0.034131
120	0.23281	1694.8	1881.1	6.64	2.405	13.664	0.036885
140	0.24591	1732.5	1929.2	6.7595	2.4132	14.457	0.039801
160	0.25886	1770.6	1977.7	6.8739	2.4311	15.248	0.042835
180	0.2717	1809.2	2026.5	6.9842	2.4558	16.037	0.045985
200	0.28444	1848.4	2075.9	7.0909	2.4854	16.823	0.049213

Superheated/subcooled Ammonia Pressure 9.0 bar (T sat = 21.522)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0016449	442.71	444.19	1.8249	4.7564	136.26	0.49547
g	0.14236	1496.2	1624.4	5.8299	3.0609	9.7242	0.025709
30	0.14869	1515.7	1649.5	5.9141	2.8823	10.067	0.026425
40	0.15579	1537.3	1677.6	6.0051	2.736	10.469	0.027341
50	0.1626	1558	1704.4	6.0895	2.6347	10.869	0.02833
60	0.16919	1578.1	1730.4	6.1686	2.5635	11.269	0.029388
70	0.17561	1597.7	1755.7	6.2436	2.5132	11.667	0.030512
80	0.18189	1617	1780.7	6.3153	2.478	12.066	0.031697
90	0.18807	1636.1	1805.3	6.3841	2.454	12.465	0.032941
100	0.19416	1655	1829.8	6.4506	2.4384	12.863	0.034239
120	0.20613	1692.9	1878.4	6.5775	2.4255	13.659	0.036989
140	0.21788	1730.8	1926.9	6.6979	2.4292	14.454	0.039901
160	0.22948	1769.1	1975.6	6.813	2.4439	15.247	0.042925
180	0.24096	1807.8	2024.7	6.9238	2.4663	16.037	0.046068
200	0.25235	1847.2	2074.3	7.0309	2.4942	16.824	0.049291

Superheated/subcooled Ammonia Pressure 10.0 bar (T sat = 24.895)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0016586	458.66	460.32	1.8788	4.7835	131.82	0.48581
g	0.1285	1498	1626.5	5.7916	3.133	9.8313	0.026145
30	0.13204	1510.2	1642.2	5.8437	3.0091	10.04	0.026577
40	0.13866	1532.7	1671.3	5.9383	2.8298	10.447	0.027483
50	0.14496	1554	1699	6.0252	2.707	10.851	0.028464
60	0.15104	1574.5	1725.6	6.1063	2.6208	11.253	0.029515
70	0.15693	1594.5	1751.5	6.1829	2.5598	11.655	0.030634
80	0.16269	1614.2	1776.8	6.2558	2.5166	12.055	0.031814
90	0.16833	1633.5	1801.8	6.3256	2.4865	12.456	0.033054
100	0.17389	1652.7	1826.6	6.3929	2.4661	12.856	0.034349
120	0.18478	1690.9	1875.7	6.521	2.4463	13.654	0.037096
140	0.19546	1729.1	1924.6	6.6423	2.4454	14.451	0.040003
160	0.20598	1767.6	1973.6	6.7581	2.4569	15.246	0.043016
180	0.21638	1806.5	2022.9	6.8695	2.4769	16.037	0.046153
200	0.22668	1846	2072.7	6.977	2.503	16.825	0.04937

Superheated/subcooled Ammonia Pressure 12.0 bar (T sat = 30.935)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0016843	487.42	489.44	1.9744	4.837	124.33	0.46872
g	0.10749	1500.8	1629.8	5.7244	3.2725	10.026	0.02698
50	0.11844	1545.7	1687.8	5.9096	2.8649	10.815	0.028745
70	0.12888	1588.1	1742.8	6.0748	2.6586	11.63	0.030887
90	0.13871	1628.3	1794.8	6.2221	2.5541	12.439	0.033289
110	0.14814	1667.5	1845.3	6.3575	2.5026	13.244	0.035921
130	0.15731	1706.3	1895.1	6.4842	2.4815	14.046	0.038788
150	0.16628	1745.1	1944.7	6.6043	2.4794	14.845	0.041688
170	0.17512	1784.2	1994.4	6.719	2.4898	15.641	0.044752
190	0.18384	1823.7	2044.3	6.8292	2.5089	16.433	0.04792
210	0.19248	1863.8	2094.7	6.9358	2.5341	17.221	0.051152
230	0.20105	1904.5	2145.7	7.0392	2.564	18.004	0.054411
250	0.20956	1945.9	2197.3	7.1398	2.5973	18.783	0.057657
270	0.21803	1988	2249.6	7.2379	2.6332	19.556	0.060848
290	0.22646	2030.9	2302.7	7.3338	2.6712	20.324	0.063942

Superheated/subcooled Ammonia Pressure 14.0 bar (T sat = 36.253)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0017082	512.96	515.36	2.0578	4.8902	118.16	0.45389
g	0.092296	1502.7	1631.9	5.6666	3.4075	10.2	0.027778
50	0.099416	1536.9	1676	5.8062	3.0441	10.78	0.029045
70	0.10881	1581.5	1733.8	5.9797	2.766	11.607	0.031153
90	0.11752	1623.1	1787.6	6.132	2.6259	12.423	0.033535
110	0.12582	1663.2	1839.3	6.2707	2.554	13.234	0.036155
130	0.13384	1702.6	1890	6.3996	2.5202	14.041	0.039032
150	0.14167	1741.9	1940.3	6.5213	2.5096	14.843	0.041895
170	0.14935	1781.4	1990.5	6.6373	2.5141	15.641	0.044938
190	0.15691	1821.2	2040.9	6.7486	2.5288	16.435	0.04809
210	0.16439	1861.5	2091.7	6.8559	2.5507	17.225	0.051311
230	0.1718	1902.4	2143	6.9599	2.578	18.009	0.05456
250	0.17915	1944	2194.8	7.061	2.6093	18.789	0.057798
270	0.18646	1986.3	2247.4	7.1595	2.6436	19.563	0.060983
290	0.19373	2029.4	2300.6	7.2558	2.6803	20.332	0.064072

Superheated/subcooled Ammonia Pressure 16.0 bar (T sat = 41.022)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0017307	536.08	538.85	2.132	4.9438	112.94	0.44073
g	0.080782	1504.1	1633.3	5.6156	3.5397	10.36	0.028548
50	0.085064	1527.6	1663.7	5.711	3.2495	10.745	0.029367
70	0.09371	1574.6	1724.6	5.8939	2.8833	11.584	0.031435
90	0.10161	1617.6	1780.2	6.0516	2.7021	12.409	0.033793
110	0.10907	1658.7	1833.2	6.1937	2.6077	13.225	0.036401
130	0.11624	1698.9	1884.8	6.325	2.5602	14.036	0.039289
150	0.1232	1738.7	1935.8	6.4484	2.5406	14.841	0.04211
170	0.13001	1778.6	1986.6	6.5656	2.5388	15.642	0.04513
190	0.13671	1818.7	2037.4	6.6779	2.549	16.438	0.048265
210	0.14332	1859.3	2088.6	6.786	2.5676	17.229	0.051473
230	0.14986	1900.4	2140.2	6.8907	2.5922	18.015	0.054712
250	0.15635	1942.2	2192.3	6.9922	2.6215	18.796	0.057942
270	0.16278	1984.6	2245.1	7.0912	2.6541	19.57	0.06112
290	0.16918	2027.8	2298.5	7.1878	2.6895	20.34	0.064203

Superheated/subcooled Ammonia Pressure 18.0 bar (T sat = 45.361)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0017523	557.28	560.44	2.1992	4.9983	108.41	0.42888
g	0.071744	1504.9	1634	5.5698	3.6706	10.509	0.029299
50	0.073816	1517.7	1650.6	5.6215	3.4882	10.711	0.029714
70	0.081928	1567.5	1715	5.8149	3.012	11.563	0.031734
90	0.089216	1612.1	1772.7	5.9784	2.7833	12.396	0.034065
110	0.096029	1654.2	1827	6.1241	2.6639	13.218	0.036658
130	0.10254	1695.1	1879.6	6.2579	2.6015	14.032	0.039561
150	0.10883	1735.4	1931.3	6.3831	2.5724	14.841	0.042334
170	0.11497	1775.7	1982.7	6.5016	2.564	15.644	0.045328
190	0.121	1816.2	2034	6.6149	2.5695	16.442	0.048445
210	0.12694	1857	2085.5	6.7238	2.5846	17.234	0.051638
230	0.1328	1898.4	2137.4	6.8291	2.6066	18.021	0.054867
250	0.13861	1940.3	2189.8	6.9312	2.6337	18.803	0.058089
270	0.14437	1982.9	2242.8	7.0306	2.6647	19.578	0.06126
290	0.15009	2026.2	2296.4	7.1275	2.6987	20.348	0.064336

Superheated/subcooled Ammonia Pressure 20.0 bar (T sat = 49.351)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
49.351	0.0017732	576.95	580.49	2.2606	5.0539	104.42	0.41807
49.351	0.064453	1505.3	1634.2	5.5281	3.801	10.65	0.030036
50	0.064729	1507.2	1636.7	5.5357	3.77	10.679	0.030092
70	0.072463	1560.1	1705.1	5.7411	3.154	11.544	0.032052
90	0.079278	1606.4	1765	5.9109	2.87	12.384	0.03435
110	0.085583	1649.6	1820.7	6.0604	2.7227	13.211	0.036928
130	0.091567	1691.2	1874.3	6.1968	2.6443	14.03	0.039849
150	0.097332	1732.1	1926.8	6.3237	2.605	14.841	0.042568
170	0.10294	1772.8	1978.7	6.4436	2.5898	15.647	0.045533
190	0.10843	1813.6	2030.5	6.5579	2.5904	16.446	0.048629
210	0.11382	1854.7	2082.4	6.6676	2.6019	17.24	0.051807
230	0.11915	1896.3	2134.6	6.7735	2.6212	18.028	0.055025
250	0.12441	1938.4	2187.3	6.8762	2.6461	18.81	0.058237
270	0.12963	1981.2	2240.5	6.976	2.6754	19.587	0.061401
290	0.13481	2024.7	2294.3	7.0733	2.708	20.357	0.064471

Saturation temperature tables

T (c)	P(bar)	v_f (m3/kg)	v_g (m3/kg)	u_f (kJ/kg)	u_g (kJ/kg)	h_f (kJ/kg)	h_g (kJ/kg)	s_f (kJ/kg*K)	s_g (kJ/kg*K)	σ (N/m)	μ_f (μPa*s)	μ_g (μPa*s)	k_f (W/m*K)	k_g (W/m*K)
-100	0.028987	0.001554	11.235	-24.072	423.97	-24.067	456.53	-0.01035	2.7653	0.024223	425.35	4.8229	0.16432	0.006938
-90	0.064471	0.001579	5.3316	-3.4318	433.88	-3.4217	468.25	0.10553	2.6809	0.022736	364.28	5.0813	0.15819	0.007673
-80	0.1305	0.001606	2.7685	17.485	444.02	17.506	480.15	0.21672	2.612	0.021263	315.77	5.3389	0.15203	0.008434
-70	0.24407	0.001634	1.5493	38.709	454.36	38.749	492.17	0.32386	2.5558	0.019804	276.32	5.5955	0.14589	0.009222
-60	0.42699	0.001664	0.92297	60.276	464.86	60.347	504.27	0.42749	2.5102	0.018361	243.62	5.8513	0.13982	0.010037
-50	0.70578	0.001695	0.57942	82.222	475.49	82.341	516.38	0.5281	2.4732	0.016936	216.09	6.1067	0.13385	0.01088
-40	1.1113	0.001729	0.38012	104.59	486.22	104.78	528.46	0.62615	2.4434	0.015529	192.63	6.3631	0.12798	0.011756
-30	1.6785	0.001765	0.2588	127.41	497	127.71	540.44	0.72201	2.4195	0.014143	172.41	6.6222	0.12224	0.01267
-20	2.4454	0.001803	0.1818	150.74	507.8	151.18	552.26	0.81606	2.4004	0.012779	154.81	6.8868	0.11666	0.013631
-10	3.453	0.001846	0.13111	174.62	518.57	175.25	563.84	0.90861	2.3853	0.011439	139.35	7.1603	0.11124	0.014649
0	4.7449	0.001892	0.096665	199.1	529.24	200	575.11	1	2.3733	0.010126	125.65	7.4475	0.106	0.015742
4	5.3513	0.001911	0.086026	209.08	533.47	210.1	579.51	1.0363	2.3692	0.009609	120.58	7.5675	0.10396	0.016204
8	6.0136	0.001932	0.076765	219.17	537.67	220.33	583.83	1.0725	2.3654	0.009097	115.74	7.691	0.10194	0.016684
10	6.3665	0.001943	0.072584	224.26	539.76	225.49	585.97	1.0905	2.3636	0.008843	113.39	7.7543	0.10095	0.01693
15	7.3158	0.00197	0.063261	237.11	544.93	238.55	591.21	1.1356	2.3595	0.008213	107.72	7.9176	0.098493	0.017569
20	8.3654	0.002	0.055317	250.15	550.03	251.82	596.3	1.1805	2.3556	0.007592	102.32	8.089	0.096087	0.018244
25	9.5218	0.002031	0.048512	263.4	555.04	265.34	601.23	1.2255	2.352	0.00698	97.157	8.2701	0.093729	0.01896
30	10.791	0.002064	0.042649	276.88	559.94	279.11	605.96	1.2704	2.3486	0.006378	92.209	8.4627	0.091417	0.019723
35	12.181	0.0021	0.037571	290.6	564.7	293.15	610.46	1.3154	2.3451	0.005787	87.452	8.669	0.089152	0.020543
40	13.697	0.002139	0.033151	304.57	569.3	307.5	614.7	1.3606	2.3416	0.005206	82.861	8.8918	0.086929	0.021429
45	15.346	0.002181	0.029282	318.83	573.69	322.17	618.62	1.4059	2.3377	0.004638	78.414	9.1344	0.084748	0.022395
50	17.137	0.002228	0.02588	333.4	577.82	337.22	622.17	1.4516	2.3334	0.004083	74.086	9.4013	0.082604	0.023458
55	19.077	0.002279	0.02287	348.32	581.64	352.67	625.27	1.4977	2.3284	0.003543	69.852	9.6983	0.080493	0.024644
60	21.175	0.002336	0.020193	363.65	585.08	368.6	627.83	1.5444	2.3226	0.003018	65.682	10.033	0.078407	0.025988
65	23.438	0.002401	0.017796	379.46	588.03	385.09	629.74	1.5919	2.3155	0.00251	61.545	10.417	0.076342	0.027543
70	25.878	0.002477	0.015634	395.84	590.36	402.25	630.82	1.6406	2.3067	0.002022	57.397	10.866	0.074288	0.029392
75	28.505	0.002567	0.013664	412.95	591.85	420.27	630.8	1.6908	2.2955	0.001557	53.183	11.405	0.072242	0.031679
80	31.332	0.002678	0.011843	431.05	592.16	439.44	629.26	1.7434	2.2809	0.001119	48.818	12.076	0.07022	0.034673
85	34.376	0.002824	0.010121	450.61	590.59	460.32	625.38	1.7997	2.2606	0.000714	44.149	12.964	0.068319	0.03897
90	37.657	0.00304	0.008413	472.78	585.59	484.23	617.27	1.8633	2.2297	0.000352	38.835	14.274	0.067131	0.04633
95	41.21	0.003494	0.006413	502.6	570.35	517	596.78	1.9498	2.1665	6.14E-05	31.408	16.968	0.073686	0.068972

Saturation pressure tables

P (bar)	T (c)	v_f m3/kg	v_g m3/kg	u_f kJ/kg	u_g kJ/kg	h_f kJ/kg	h_g kJ/kg	s_f kJ/kg*K	s_g kJ/kg*K	σ N/m	μ_f µPa*s	μ_g µPa*s	k_f W/m*K	k_g W/m*K
0.04	-96.125	0.001563	8.3179	-16.105	427.78	-16.099	461.05	0.035156	2.7305	0.023645	399.9	4.9231	0.16195	0.00722
0.06	-90.953	0.001577	5.7005	-5.4107	432.93	-5.4012	467.13	0.094702	2.6882	0.022877	369.49	5.0567	0.15877	0.007602
0.1	-83.919	0.001595	3.5448	9.2517	440.02	9.2677	475.47	0.17366	2.6373	0.021838	333.54	5.238	0.15444	0.008133
0.24	-70.284	0.001633	1.5737	38.101	454.06	38.141	491.83	0.32086	2.5572	0.019845	277.34	5.5883	0.14607	0.009199
0.26	-68.923	0.001637	1.4612	41.014	455.48	41.056	493.47	0.33517	2.5504	0.019648	272.51	5.6231	0.14524	0.009308
0.5	-56.97	0.001673	0.79745	66.883	468.07	66.967	507.94	0.45827	2.4981	0.017928	234.79	5.9286	0.138	0.010289
0.74	-49.002	0.001698	0.55453	84.433	476.56	84.559	517.59	0.53799	2.4699	0.016795	213.59	6.1322	0.13326	0.010966
0.76	-48.436	0.0017	0.54098	85.691	477.16	85.82	518.28	0.5436	2.4681	0.016715	212.18	6.1467	0.13292	0.011015
1	-42.414	0.00172	0.41932	99.146	483.62	99.318	525.55	0.60269	2.45	0.015867	197.97	6.301	0.12938	0.011542
2	-25.453	0.001782	0.21963	137.95	501.92	138.31	545.84	0.76498	2.4103	0.01352	164.11	6.7416	0.11968	0.013101
3	-14.178	0.001827	0.14986	164.57	514.08	165.12	559.04	0.8701	2.3912	0.011996	145.57	7.0447	0.11348	0.014216
4	-5.4726	0.001866	0.11393	185.62	523.41	186.37	568.99	0.95011	2.3795	0.010841	132.95	7.2883	0.10884	0.015134
5	1.7265	0.0019	0.091889	203.4	531.07	204.35	577.01	1.0157	2.3715	0.009903	123.43	7.4989	0.10511	0.01594
6	7.9215	0.001932	0.076935	218.97	537.59	220.13	583.75	1.0718	2.3655	0.009107	115.83	7.6886	0.10198	0.016674
7	13.393	0.001961	0.066093	232.95	543.27	234.33	589.54	1.1211	2.3608	0.008415	109.51	7.8643	0.099277	0.01736
8	18.315	0.00199	0.057857	245.73	548.32	247.32	594.6	1.1654	2.3569	0.0078	104.11	8.0302	0.096893	0.018012
9	22.802	0.002017	0.051376	257.55	552.85	259.37	599.08	1.2057	2.3536	0.007248	99.397	8.1892	0.09476	0.018639
10	26.938	0.002044	0.046137	268.6	556.95	270.64	603.09	1.2429	2.3507	0.006746	95.215	8.3433	0.092828	0.019249
12	34.374	0.002096	0.038168	288.87	564.11	291.38	609.91	1.3098	2.3456	0.00586	88.038	8.6424	0.089433	0.020437
14	40.951	0.002147	0.032375	307.26	570.15	310.26	615.47	1.3692	2.3409	0.005097	82.005	8.9363	0.086511	0.021606
16	46.872	0.002198	0.027958	324.24	575.27	327.76	620	1.423	2.3362	0.004429	76.781	9.2312	0.083941	0.02278
18	52.272	0.00225	0.024467	340.13	579.6	344.18	623.64	1.4725	2.3312	0.003836	72.152	9.5321	0.081641	0.02398
20	57.247	0.002304	0.021629	355.16	583.24	359.77	626.5	1.5186	2.3259	0.003305	67.971	9.8435	0.079553	0.025226
22	61.867	0.00236	0.019268	369.49	586.24	374.69	628.63	1.5621	2.3201	0.002826	64.135	10.17	0.077634	0.02654
24	66.185	0.002418	0.017264	383.28	588.64	389.09	630.08	1.6034	2.3135	0.002393	60.565	10.517	0.075854	0.02795
26	70.241	0.002481	0.015535	396.65	590.45	403.1	630.84	1.643	2.3062	0.001999	57.196	10.889	0.074189	0.029491
28	74.067	0.002549	0.014018	409.7	591.65	416.83	630.9	1.6813	2.2978	0.001642	53.978	11.296	0.072623	0.031209
30	77.69	0.002623	0.012668	422.54	592.2	430.41	630.2	1.7187	2.2882	0.001318	50.861	11.746	0.071149	0.033176
34	84.403	0.002804	0.010323	448.17	590.91	457.71	626.01	1.7927	2.2634	0.00076	44.731	12.842	0.068531	0.038351
36	87.523	0.002921	0.009266	461.34	588.68	471.86	622.03	1.8305	2.2469	0.000525	41.587	13.549	0.067534	0.042076
40	93.344	0.003283	0.007166	490.88	577.85	504.01	606.51	1.9155	2.1952	0.000146	34.385	15.729	0.068793	0.056757
42	96.053	0.003749	0.005747	513.51	561.1	529.26	585.23	1.9822	2.1338	1.75E-05	28.559	18.444	0.086632	0.092097

Superheated/subcooled Propane Pressure 0.05 bar (T sat = -93.321)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0015705	-10.316	-10.308	0.067602	2.0685	382.95	0.16023
g	6.7556	430.56	464.34	2.707	1.2084	4.9955	0.007426
-90	6.8819	433.96	468.37	2.7293	1.219	5.0837	0.0076755
-80	7.2618	444.41	480.72	2.7949	1.2519	5.3496	0.0084459
-70	7.6412	455.21	493.41	2.859	1.2861	5.6161	0.0092454
-60	8.0203	466.35	506.45	2.9216	1.3215	5.8832	0.010074
-50	8.3991	477.85	519.85	2.983	1.3583	6.1507	0.010932
-40	8.7776	489.73	533.62	3.0434	1.3964	6.4184	0.011818
-30	9.156	502	547.78	3.1028	1.4357	6.6861	0.012734
-20	9.5342	514.67	562.34	3.1615	1.4762	6.9538	0.013679
-10	9.9122	527.75	577.31	3.2195	1.5177	7.2213	0.014653
0	10.29	541.24	592.69	3.2769	1.5602	7.4885	0.015656
10	10.668	555.17	608.51	3.3338	1.6035	7.7552	0.016688
20	11.046	569.54	624.77	3.3902	1.6475	8.0213	0.017749

Superheated/subcooled Propane Pressure 0.1 bar (T sat = -83.919)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
-90	0.0015791	-3.4335	-3.4177	0.10553	2.0776	364.29	0.15819
f	0.0015952	9.2517	9.2677	0.17366	2.0951	333.54	0.15444
g	3.5448	440.02	475.47	2.6373	1.2437	5.238	0.0081328
-80	3.6197	444.17	480.37	2.663	1.2564	5.3429	0.0084387
-70	3.8106	454.99	493.1	2.7272	1.2897	5.6108	0.0092393
-60	4.0012	466.16	506.17	2.79	1.3246	5.8789	0.010069
-50	4.1914	477.68	519.59	2.8515	1.3609	6.1472	0.010927
-40	4.3814	489.58	533.39	2.912	1.3986	6.4155	0.011815
-30	4.5712	501.86	547.57	2.9716	1.4376	6.6838	0.012731
-20	4.7609	514.54	562.15	3.0303	1.4778	6.952	0.013677
-10	4.9504	527.63	577.13	3.0884	1.5191	7.2199	0.014651
0	5.1398	541.13	592.53	3.1458	1.5614	7.4874	0.015655
10	5.3291	555.07	608.36	3.2027	1.6046	7.7543	0.016688
20	5.5184	569.44	624.63	3.2592	1.6485	8.0207	0.01775

Superheated/subcooled Propane Pressure 0.5 bar (T sat = -56.97)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.001673	66.883	66.967	0.45827	2.1885	234.79	0.138
g	0.79745	468.07	507.94	2.4981	1.3613	5.9286	0.010289
-50	0.82496	476.26	517.5	2.5417	1.3835	6.12	0.010896
-40	0.86421	488.3	531.51	2.603	1.4175	6.3936	0.01179
-30	0.90324	500.7	545.86	2.6633	1.4536	6.6662	0.012712
-20	0.94209	513.48	560.59	2.7227	1.4916	6.9379	0.013663
-10	0.9808	526.66	575.7	2.7812	1.531	7.2088	0.014643
0	1.0194	540.24	591.21	2.839	1.5718	7.4789	0.015652
10	1.0579	554.24	607.14	2.8963	1.6137	7.7481	0.016689
20	1.0963	568.67	623.49	2.9531	1.6566	8.0163	0.017755
30	1.1346	583.54	640.27	3.0093	1.7002	8.2836	0.01885
40	1.1729	598.85	657.5	3.0652	1.7444	8.5499	0.019973
50	1.2112	614.61	675.16	3.1208	1.7891	8.8152	0.021126
60	1.2493	630.81	693.28	3.176	1.8342	9.0793	0.022307

Superheated/subcooled Propane Pressure 1.0 bar (T sat = -42.414)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0017204	99.146	99.318	0.60269	2.2515	197.97	0.12938
g	0.41932	483.62	525.55	2.45	1.4379	6.301	0.011542
-40	0.42425	486.61	529.03	2.465	1.4449	6.3683	0.011762
-30	0.44451	499.19	543.64	2.5263	1.4763	6.646	0.012692
-20	0.46457	512.11	558.57	2.5865	1.5106	6.922	0.013649
-10	0.48447	525.41	573.86	2.6457	1.5473	7.1964	0.014635
0	0.50424	539.1	589.52	2.7041	1.5858	7.4695	0.01565
10	0.52391	553.19	605.58	2.7619	1.6259	7.7412	0.016692
20	0.54348	567.7	622.04	2.819	1.6673	8.0116	0.017763
30	0.56298	582.63	638.93	2.8756	1.7097	8.2808	0.018863
40	0.58241	598	656.24	2.9318	1.7528	8.5488	0.019991
50	0.6018	613.81	673.99	2.9876	1.7967	8.8154	0.021147
60	0.62113	630.06	692.17	3.043	1.841	9.0808	0.022332

Superheated/subcooled Propane Pressure 2.0 bar (T sat = -25.453)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0017819	137.95	138.31	0.76498	2.3382	164.11	0.11968
g	0.21963	501.92	545.84	2.4103	1.5424	6.7416	0.013101
-20	0.22548	509.19	554.29	2.444	1.5561	6.8958	0.013633
-10	0.23605	522.78	569.99	2.5048	1.5849	7.1764	0.014629
0	0.24647	536.7	586	2.5645	1.6175	7.4547	0.015654
10	0.25676	551	602.35	2.6233	1.653	7.731	0.016706
20	0.26695	565.68	619.07	2.6813	1.6907	8.0054	0.017786
30	0.27705	580.76	636.17	2.7387	1.7301	8.2779	0.018894
40	0.28709	596.25	653.67	2.7955	1.7708	8.5488	0.02003
50	0.29706	612.18	671.59	2.8518	1.8126	8.818	0.021194
60	0.30698	628.53	689.93	2.9077	1.8552	9.0855	0.022387
70	0.31685	645.32	708.7	2.9632	1.8984	9.3515	0.023608
80	0.32669	662.56	727.9	3.0184	1.9419	9.6158	0.024857
90	0.33649	680.24	747.53	3.0732	1.9857	9.8786	0.026134

Superheated/subcooled Propane Pressure 3.0 bar (T sat = -14.178)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0018274	164.57	165.12	0.8701	2.4052	145.57	0.11348
g	0.14986	514.08	559.04	2.3912	1.623	7.0447	0.014216
-10	0.15299	519.94	565.83	2.4172	1.6311	7.1635	0.014639
0	0.16036	534.15	582.26	2.4785	1.6552	7.446	0.015671
10	0.16757	548.68	598.95	2.5385	1.6844	7.7259	0.016731
20	0.17466	563.56	615.96	2.5975	1.7173	8.0034	0.017818
30	0.18166	578.81	633.31	2.6557	1.7529	8.2788	0.018934
40	0.18857	594.45	651.03	2.7132	1.7906	8.5521	0.020077
50	0.19542	610.5	669.13	2.7701	1.8299	8.8234	0.021248
60	0.20222	626.96	687.63	2.8265	1.8706	9.0929	0.022447
70	0.20896	643.85	706.54	2.8824	1.9121	9.3605	0.023674
80	0.21567	661.17	725.87	2.938	1.9542	9.6263	0.024929
90	0.22233	678.93	745.63	2.9931	1.9967	9.8903	0.026212

Superheated/subcooled Propane Pressure 4.0 bar (T sat = -5.4726)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0018658	185.62	186.37	0.95011	2.4631	132.95	0.10884
g	0.11393	523.41	568.99	2.3795	1.6929	7.2883	0.015134
0	0.11713	531.42	578.27	2.4138	1.7006	7.444	0.015704
10	0.12285	546.23	595.37	2.4753	1.7211	7.7264	0.016769
20	0.12842	561.34	612.71	2.5355	1.7477	8.0063	0.017862
30	0.13389	576.79	630.34	2.5946	1.7784	8.2837	0.018983
40	0.13926	592.59	648.29	2.6529	1.8123	8.5589	0.020132
50	0.14456	608.77	666.59	2.7104	1.8488	8.832	0.021308
60	0.1498	625.35	685.27	2.7673	1.8871	9.1029	0.022512
70	0.15499	642.35	704.34	2.8237	1.9267	9.3719	0.023745
80	0.16013	659.76	723.81	2.8797	1.9672	9.6389	0.025005
90	0.16524	677.59	743.69	2.9352	2.0084	9.9039	0.026293
100	0.17031	695.86	763.98	2.9903	2.0501	10.167	0.027609
110	0.17535	714.55	784.69	3.0451	2.092	10.428	0.028954

Superheated/subcooled Propane Pressure 5.0 bar (T sat = 1.7265)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0019	203.4	204.35	1.0157	2.5158	123.43	0.10511
g	0.091889	531.07	577.01	2.3715	1.7566	7.4989	0.01594
10	0.095898	543.63	591.58	2.4236	1.7645	7.7332	0.016823
20	0.10059	559.01	609.3	2.4852	1.7826	8.0143	0.017918
30	0.10516	574.67	627.25	2.5454	1.8071	8.2931	0.019043
40	0.10962	590.65	645.46	2.6045	1.8364	8.5695	0.020195
50	0.114	606.99	663.99	2.6627	1.8694	8.8438	0.021376
60	0.11832	623.7	682.86	2.7202	1.905	9.1158	0.022585
70	0.12258	640.81	702.09	2.7771	1.9424	9.3858	0.023821
80	0.12679	658.32	721.71	2.8334	1.981	9.6537	0.025086
90	0.13096	676.24	741.72	2.8893	2.0207	9.9196	0.026378
100	0.1351	694.58	762.13	2.9447	2.0611	10.183	0.027699
110	0.1392	713.34	782.94	2.9998	2.1019	10.445	0.029047

Superheated/subcooled Propane Pressure 6.0 bar (T sat = 7.9215)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0019315	218.97	220.13	1.0718	2.5652	115.83	0.10198
g	0.076935	537.59	583.75	2.3655	1.8167	7.6886	0.016674
10	0.077818	540.83	587.52	2.3788	1.8164	7.7472	0.016897
20	0.081956	556.54	605.71	2.442	1.8231	8.0282	0.01799
30	0.085943	572.45	624.02	2.5034	1.8397	8.3073	0.019115
40	0.089815	588.64	642.53	2.5635	1.8632	8.5842	0.020269
50	0.093595	605.14	661.3	2.6225	1.892	8.8591	0.021452
60	0.097302	622	680.38	2.6806	1.9243	9.1318	0.022664
70	0.10095	639.23	699.8	2.738	1.9591	9.4024	0.023903
80	0.10454	656.84	719.57	2.7948	1.9957	9.6709	0.025171
90	0.1081	674.86	739.71	2.8511	2.0337	9.9374	0.026467
100	0.11161	693.28	760.25	2.9068	2.0726	10.202	0.027791
110	0.1151	712.11	781.17	2.9622	2.1123	10.464	0.029143
120	0.11855	731.36	802.49	3.0171	2.1524	10.725	0.030523

Superheated/subcooled Propane Pressure 7.0 bar (T sat = 13.393)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0019612	232.95	234.33	1.1211	2.6126	109.51	0.099277
g	0.066093	543.27	589.54	2.3608	1.8745	7.8643	0.01736
20	0.068564	553.91	601.91	2.4034	1.8708	8.0487	0.018081
30	0.072161	570.12	620.64	2.4663	1.877	8.3268	0.019201
40	0.075624	586.54	639.48	2.5274	1.8932	8.6034	0.020354
50	0.078986	603.24	658.53	2.5873	1.9168	8.8782	0.021537
60	0.082266	620.25	677.83	2.6461	1.9453	9.151	0.02275
70	0.08548	637.61	697.44	2.7041	1.9772	9.4219	0.023992
80	0.088639	655.34	717.38	2.7614	2.0113	9.6906	0.025262
90	0.091753	673.45	737.68	2.8181	2.0473	9.9574	0.026561
100	0.094828	691.96	758.34	2.8742	2.0847	10.222	0.027888
110	0.097869	710.87	779.37	2.9298	2.1231	10.485	0.029242
120	0.10088	730.18	800.8	2.985	2.1622	10.745	0.030625

Superheated/subcooled Propane Pressure 8.0 bar (T sat = 18.315)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0019895	245.73	247.32	1.1654	2.6586	104.11	0.096893
g	0.057857	548.32	594.6	2.3569	1.931	8.0302	0.018012
20	0.058437	551.1	597.85	2.368	1.9277	8.0767	0.018195
30	0.061765	567.67	617.08	2.4325	1.92	8.3523	0.019305
40	0.064939	584.35	636.3	2.4949	1.927	8.6274	0.020452
50	0.067997	601.25	655.65	2.5557	1.9443	8.9013	0.021633
60	0.070964	618.44	675.21	2.6153	1.9683	9.1737	0.022845
70	0.07386	635.94	695.03	2.6739	1.9966	9.4443	0.024088
80	0.076696	653.79	715.15	2.7317	2.028	9.713	0.025359
90	0.079484	672.01	735.6	2.7888	2.0618	9.9797	0.026659
100	0.08223	690.61	756.39	2.8453	2.0975	10.244	0.027988
110	0.084941	709.6	777.55	2.9013	2.1344	10.507	0.029345
120	0.087622	728.99	799.09	2.9567	2.1723	10.768	0.03073
130	0.090277	748.78	821	3.0118	2.2108	11.027	0.032144
140	0.092908	768.98	843.3	3.0664	2.2497	11.283	0.033585

Superheated/subcooled Propane Pressure 9.0 bar (T sat = 22.802)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0020169	257.55	259.37	1.2057	2.704	99.397	0.09476
g	0.051376	552.85	599.08	2.3536	1.9866	8.1892	0.018639
30	0.05362	565.06	613.32	2.4011	1.9703	8.3846	0.01943
40	0.056585	582.05	632.98	2.4649	1.9654	8.6569	0.020566
50	0.059418	599.2	652.67	2.5268	1.9748	8.929	0.021741
60	0.062151	616.57	672.51	2.5873	1.9933	9.2001	0.02295
70	0.064804	634.23	692.56	2.6466	2.0176	9.4699	0.024191
80	0.067394	652.22	712.87	2.7049	2.0458	9.7381	0.025462
90	0.06993	670.55	733.48	2.7625	2.0772	10.004	0.026762
100	0.072424	689.24	754.42	2.8194	2.1109	10.269	0.028092
110	0.07488	708.32	775.71	2.8756	2.1462	10.532	0.029451
120	0.077304	727.78	797.35	2.9314	2.1828	10.792	0.030838
130	0.079701	747.63	819.37	2.9867	2.2202	11.051	0.032253
140	0.082075	767.89	841.76	3.0416	2.2582	11.308	0.033697

Superheated/subcooled Propane Pressure 10.0 bar (T sat = 26.938)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0020435	268.6	270.64	1.2429	2.7492	95.215	0.092828
g	0.046137	556.95	603.09	2.3507	2.0418	8.3433	0.019249
30	0.04704	562.28	609.32	2.3714	2.0298	8.4247	0.019581
40	0.049859	579.64	629.49	2.4368	2.0093	8.6924	0.020699
50	0.052525	597.05	649.57	2.5	2.009	8.9614	0.021863
60	0.055077	614.64	669.71	2.5613	2.0209	9.2306	0.023065
70	0.057543	632.47	690.02	2.6214	2.0403	9.4989	0.024302
80	0.059938	650.6	710.54	2.6803	2.065	9.7661	0.025571
90	0.062278	669.05	731.33	2.7384	2.0935	10.032	0.026871
100	0.06457	687.85	752.42	2.7957	2.125	10.296	0.028201
110	0.066824	707.01	773.83	2.8523	2.1586	10.558	0.02956
120	0.069045	726.55	795.6	2.9084	2.1937	10.818	0.030948
130	0.071237	746.48	817.71	2.9639	2.23	11.077	0.032365
140	0.073405	766.79	840.2	3.019	2.267	11.333	0.03381

Superheated/subcooled Propane Pressure 12.0 bar (T sat = 34.374)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0020956	288.87	291.38	1.3098	2.8401	88.038	0.089433
g	0.038168	564.11	609.91	2.3456	2.153	8.6424	0.020437
40	0.039637	574.36	621.93	2.3843	2.1201	8.7848	0.021035
50	0.042093	592.45	642.96	2.4504	2.0913	9.0432	0.022157
60	0.044402	610.55	663.83	2.514	2.0853	9.305	0.023333
70	0.046602	628.78	684.71	2.5758	2.0922	9.5682	0.024554
80	0.048719	647.24	705.7	2.6361	2.1076	9.8317	0.025813
90	0.050771	665.96	726.88	2.6952	2.1293	10.095	0.027107
100	0.052769	684.98	748.3	2.7534	2.1556	10.357	0.028433
110	0.054725	704.34	770	2.8108	2.1852	10.617	0.029791
120	0.056643	724.04	792.01	2.8675	2.2171	10.876	0.031178
130	0.058531	744.11	814.35	2.9236	2.2506	11.133	0.032596
140	0.060392	764.56	837.03	2.9792	2.2855	11.389	0.034042

Superheated/subcooled Propane Pressure 14.0 bar (T sat = 40.951)

T C	*v* m³/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0021468	307.26	310.26	1.3692	2.9343	82.005	0.086511
g	0.032375	570.15	615.47	2.3409	2.2688	8.9363	0.021606
50	0.034514	587.34	635.66	2.4042	2.2003	9.1521	0.022541
60	0.036689	606.1	657.46	2.4707	2.1661	9.4005	0.023665
70	0.038725	624.84	679.05	2.5345	2.1547	9.6545	0.024853
80	0.04066	643.68	700.61	2.5964	2.1576	9.9114	0.02609
90	0.042518	662.71	722.24	2.6568	2.1703	10.169	0.02737
100	0.044314	681.99	744.03	2.716	2.1899	10.428	0.028687
110	0.046062	701.57	766.05	2.7743	2.2145	10.685	0.030038
120	0.047769	721.46	788.34	2.8317	2.2425	10.942	0.031422
130	0.049443	741.69	810.91	2.8884	2.2729	11.197	0.032838
140	0.051087	762.28	833.8	2.9445	2.3052	11.451	0.034283
150	0.052707	783.23	857.02	3	2.3388	11.704	0.035759
160	0.054305	804.55	880.58	3.055	2.3732	11.955	0.037264

Superheated/subcooled Propane Pressure 16.0 bar (T sat = 46.872)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0021981	324.24	327.76	1.423	3.0342	76.781	0.083941
g	0.027958	575.27	620	2.3362	2.3948	9.2312	0.02278
50	0.028678	581.54	627.42	2.3592	2.3533	9.2971	0.023065
60	0.030808	601.2	650.49	2.4296	2.271	9.5223	0.024083
70	0.032752	620.58	672.98	2.4961	2.2319	9.7612	0.025211
80	0.034569	639.9	695.21	2.5599	2.2168	10.007	0.026411
90	0.036294	659.3	717.37	2.6218	2.2175	10.258	0.027666
100	0.037948	678.88	739.6	2.6822	2.2286	10.51	0.028966
110	0.039546	698.7	761.97	2.7413	2.247	10.763	0.030306
120	0.041099	718.79	784.55	2.7995	2.2702	11.017	0.031682
130	0.042615	739.2	807.39	2.8569	2.297	11.269	0.033091
140	0.0441	759.94	830.5	2.9135	2.3264	11.521	0.034533
150	0.045559	781.02	853.92	2.9695	2.3575	11.771	0.036007
160	0.046994	802.46	877.66	3.025	2.39	12.02	0.037511

Superheated/subcooled Propane Pressure 18.0 bar (T sat = 52.272)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0022502	340.13	344.18	1.4725	3.1427	72.152	0.081641
g	0.024467	579.6	623.64	2.3312	2.5367	9.5321	0.02398
60	0.02612	595.71	642.72	2.3892	2.4144	9.6783	0.024629
70	0.028035	615.94	666.4	2.4592	2.3298	9.8926	0.025649
80	0.029783	635.85	689.46	2.5255	2.2885	10.123	0.026786
90	0.031419	655.7	712.25	2.5891	2.2725	10.362	0.028001
100	0.032971	675.62	734.97	2.6508	2.2727	10.606	0.029275
110	0.034459	695.71	757.74	2.711	2.2832	10.852	0.030596
120	0.035897	716.04	780.65	2.7701	2.3008	11.1	0.031958
130	0.037295	736.64	803.77	2.8281	2.3232	11.349	0.033359
140	0.038658	757.54	827.13	2.8854	2.3491	11.597	0.034794
150	0.039993	778.77	850.76	2.9419	2.3775	11.845	0.036263
160	0.041303	800.34	874.68	2.9978	2.4078	12.091	0.037763
170	0.042592	822.25	898.92	3.0531	2.4394	12.337	0.039295
180	0.043863	844.52	923.48	3.1079	2.4719	12.581	0.040858

Superheated/subcooled Propane Pressure 20.0 bar (T sat = 57.247)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0023038	355.16	359.77	1.5186	3.2632	67.971	0.079553
g	0.021629	583.24	626.5	2.3259	2.7006	9.8435	0.025226
60	0.022227	589.37	633.82	2.348	2.6264	9.8819	0.025383
70	0.024178	610.79	659.15	2.4229	2.4594	10.056	0.026199
80	0.025902	631.48	683.29	2.4923	2.3771	10.261	0.027232
90	0.027483	651.87	706.83	2.558	2.3377	10.483	0.028385
100	0.028964	672.19	730.12	2.6213	2.3232	10.715	0.029618
110	0.030372	692.6	753.35	2.6827	2.3239	10.953	0.030912
120	0.031723	713.19	776.63	2.7427	2.3344	11.195	0.032255
130	0.033028	734	800.06	2.8015	2.3516	11.438	0.033641
140	0.034297	755.09	823.68	2.8594	2.3735	11.682	0.035066
150	0.035535	776.47	847.54	2.9165	2.3988	11.926	0.036527
160	0.036746	798.17	871.66	2.9728	2.4265	12.169	0.038022
170	0.037936	820.21	896.08	3.0285	2.4561	12.412	0.03955
180	0.039106	842.58	920.79	3.0837	2.4869	12.653	0.04111

Superheated/subcooled Propane Pressure 22.0 bar (T sat = 61.867)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0023595	369.49	374.69	1.5621	3.3999	64.135	0.077634
g	0.019268	586.24	628.63	2.3201	2.8936	10.17	0.02654
70	0.020924	604.98	651.01	2.3861	2.6412	10.261	0.02692
80	0.022669	626.71	676.58	2.4595	2.4901	10.428	0.027773
90	0.024225	647.77	701.07	2.5279	2.4162	10.626	0.028829
100	0.02566	668.58	725.03	2.593	2.3818	10.842	0.030003
110	0.027009	689.36	748.78	2.6558	2.3699	11.068	0.031258
120	0.028293	710.23	772.48	2.7169	2.3717	11.3	0.032573
130	0.029528	731.28	796.24	2.7766	2.3827	11.536	0.03394
140	0.030721	752.56	820.15	2.8352	2.3999	11.774	0.03535
150	0.031881	774.12	844.25	2.8928	2.4215	12.014	0.036801
160	0.033014	795.96	868.59	2.9496	2.4464	12.253	0.038288
170	0.034123	818.12	893.19	3.0058	2.4736	12.493	0.03981
180	0.035211	840.61	918.07	3.0613	2.5026	12.732	0.041365

Superheated/subcooled Propane Pressure 24.0 bar (T sat = 66.185)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
f	0.0024182	383.28	389.09	1.6034	3.5591	60.565	0.075854
g	0.017264	588.64	630.08	2.3135	3.125	10.517	0.02795
70	0.018081	598.19	641.58	2.3473	2.9212	10.527	0.027927
80	0.019906	621.42	669.19	2.4266	2.6403	10.632	0.028448
90	0.021469	643.36	694.88	2.4983	2.5129	10.795	0.029351
100	0.02288	664.75	719.66	2.5656	2.4508	10.988	0.030439
110	0.024188	685.96	744.01	2.63	2.4223	11.197	0.031639
120	0.025423	707.16	768.17	2.6923	2.4133	11.418	0.032918
130	0.026601	728.47	792.31	2.7529	2.4167	11.645	0.034258
140	0.027735	749.97	816.53	2.8123	2.4284	11.876	0.035649
150	0.028832	771.7	840.9	2.8705	2.4459	12.109	0.037085
160	0.0299	793.71	865.47	2.9279	2.4675	12.344	0.038561
170	0.030942	816	890.26	2.9845	2.4921	12.58	0.040075
180	0.031963	838.6	915.32	3.0404	2.519	12.815	0.041624

Superheated/subcooled Propane Pressure 26.0 bar (T sat = 70.241)

T C	*v* m^3/kg	*u* kJ/kg	*h* kJ/kg	*s* kJ/kg K	c_P kJ/kg K	μ μPa s	*k* W/m K
70.241	0.0024809	396.65	403.1	1.643	3.7495	57.196	0.074189
70.241	0.015535	590.45	630.84	2.3062	3.4088	10.889	0.029491
80	0.017484	615.43	660.89	2.3925	2.8525	10.885	0.029327
90	0.019091	638.54	688.18	2.4687	2.6354	10.995	0.029978
100	0.020498	660.67	713.96	2.5388	2.533	11.156	0.030938
110	0.021782	682.38	739.01	2.605	2.4825	11.344	0.032062
120	0.02298	703.96	763.71	2.6686	2.4599	11.549	0.033291
130	0.024115	725.57	788.27	2.7303	2.4542	11.765	0.034597
140	0.025201	747.3	812.83	2.7905	2.4593	11.987	0.035963
150	0.026247	769.23	837.48	2.8495	2.472	12.213	0.037381
160	0.027261	791.4	862.28	2.9074	2.4899	12.442	0.038843
170	0.028249	813.84	887.29	2.9645	2.5116	12.673	0.040346
180	0.029214	836.57	912.52	3.0208	2.5362	12.904	0.041887
190	0.030159	859.6	938.02	3.0764	2.5628	13.136	0.043463

Superheated/subcooled Propane Pressure 30.0 bar (T sat = 77.69)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0026234	422.54	430.41	1.7187	4.2869	50.861	0.071149
g	0.012668	592.2	630.2	2.2882	4.2343	11.746	0.033176
80	0.013234	599.72	639.42	2.3144	3.7869	11.655	0.032464
90	0.01512	627.26	672.62	2.4071	3.0195	11.529	0.031735
100	0.016595	651.54	701.32	2.4851	2.7576	11.579	0.032202
110	0.017874	674.59	728.21	2.5562	2.635	11.701	0.033072
120	0.019034	697.11	754.21	2.6232	2.5723	11.861	0.034147
130	0.020111	719.43	779.76	2.6874	2.5414	12.044	0.035351
140	0.021128	741.72	805.11	2.7495	2.5296	12.241	0.036646
150	0.022098	764.1	830.4	2.81	2.5302	12.448	0.038012
160	0.023031	786.64	855.74	2.8692	2.5391	12.662	0.039435
170	0.023933	809.4	881.2	2.9273	2.554	12.88	0.040908
180	0.024811	832.4	906.83	2.9845	2.5731	13.101	0.042426
190	0.025666	855.67	932.67	3.0409	2.5953	13.323	0.043985

Superheated/subcooled Propane Pressure 35.0 bar (T sat = 85.981)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.0028593	454.7	464.71	1.8114	5.6995	43.175	0.067989
g	0.0097883	589.96	624.22	2.2556	6.4839	13.177	0.040073
90	0.010923	606.87	645.1	2.3134	4.4085	12.722	0.036468
100	0.012753	637.39	682.03	2.4138	3.2662	12.363	0.034662
110	0.014125	663.28	712.72	2.495	2.9226	12.307	0.034789
120	0.015295	687.53	741.06	2.568	2.7641	12.365	0.035493
130	0.016345	711.04	768.25	2.6363	2.6812	12.479	0.036476
140	0.017314	734.22	794.82	2.7014	2.6373	12.629	0.037625
150	0.018223	757.29	821.07	2.7642	2.6164	12.8	0.038889
160	0.019087	780.39	847.19	2.8252	2.6101	12.985	0.040238
170	0.019916	803.6	873.31	2.8848	2.6138	13.18	0.041656
180	0.020715	826.99	899.49	2.9433	2.6244	13.383	0.043131
190	0.021491	850.59	925.81	3.0007	2.64	13.59	0.044656
200	0.022245	874.45	952.3	3.0573	2.6593	13.8	0.046226

Superheated/subcooled Propane Pressure 40.0 bar (T sat = 93.344)

T C	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/kg K	c_P kJ/kg K	μ μPa s	k W/m K
f	0.003283	490.88	504.01	1.9155	12.89	34.385	0.068793
g	0.0071659	577.85	606.51	2.1952	18.098	15.729	0.056757
100	0.0094598	616.92	654.76	2.3259	4.6896	13.782	0.039806
110	0.011143	649.26	693.84	2.4293	3.4368	13.209	0.037433
120	0.0124	676.4	726	2.5122	3.0513	13.05	0.037312
130	0.013466	701.65	755.51	2.5863	2.8709	13.043	0.037883
140	0.014418	726.02	783.69	2.6554	2.7745	13.112	0.038788
150	0.015295	749.97	811.15	2.721	2.7215	13.226	0.039891
160	0.016115	773.75	838.21	2.7842	2.694	13.37	0.041128
170	0.016894	797.51	865.08	2.8456	2.6827	13.532	0.042463
180	0.017639	821.34	891.9	2.9054	2.6824	13.709	0.043876
190	0.018356	845.33	918.75	2.964	2.6896	13.894	0.045353
200	0.019051	869.51	945.71	3.0216	2.7024	14.087	0.046886

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	T_c, K	$P_c \times$ 1E-06 Pa	V_c, m^3/Kmol	Z_c	Acentric factor
1	Methane	CH_4	74828	16.043	190.564	4.59	0.099	0.286	0.011
2	Ethane	C_2H_6	74840	30.070	305.32	4.85	0.146	0.279	0.098
3	Propane	C_3H_8	74986	44.097	369.83	4.21	0.200	0.273	0.149
4	*n*-Butane	C_4H_{10}	106978	58.123	425.12	3.77	0.255	0.272	0.197
5	*n*-Pentane	C_5H_{12}	109660	72.150	469.7	3.36	0.315	0.271	0.251
6	*n*-Hexane	C_6H_{14}	110543	86.177	507.6	3.04	0.373	0.269	0.304
7	*n*-Heptane	C_7H_{16}	142825	100.204	540.2	2.72	0.428	0.259	0.346
8	*n*-Octane	C_8H_{18}	111659	114.231	568.7	2.47	0.486	0.254	0.396
9	*n*-Nonane	C_9H_{20}	111842	128.258	594.6	2.31	0.540	0.252	0.446
10	*n*-Decane	$C_{10}H_{22}$	124185	142.285	617.7	2.09	0.601	0.245	0.488
11	*n*-Undecane	$C_{11}H_{24}$	1120214	156.312	639	1.95	0.658	0.242	0.530
12	*n*-Dodecane	$C_{12}H_{26}$	112403	170.338	658	1.82	0.718	0.239	0.577
13	*n*-Tridecane	$C_{13}H_{28}$	629505	184.365	675	1.68	0.779	0.233	0.617
14	*n*-Tetradecane	$C_{14}H_{30}$	629594	198.392	693	1.57	0.830	0.226	0.643
15	*n*-Pentadecane	$C_{15}H_{32}$	629629	212.419	708	1.47	0.888	0.222	0.685
16	*n*-Hexadecane	$C_{16}H_{34}$	544763	226.446	723	1.41	0.943	0.221	0.721
17	*n*-Heptadecane	$C_{17}H_{36}$	629787	240.473	736	1.34	0.998	0.219	0.771
18	*n*-Octadecane	$C_{18}H_{38}$	593453	254.500	747	1.26	1.059	0.214	0.806
19	*n*-Nonadecane	$C_{19}H_{40}$	629925	268.527	758	1.21	1.119	0.215	0.851
20	*n*-Eicosane	$C_{20}H_{42}$	112958	282.553	768	1.17	1.169	0.215	0.912
21	2-Methylpropane	C_4H_{10}	75285	58.123	408.14	3.62	0.261	0.278	0.177
22	2-Methylbutane	C_5H_{12}	78784	72.150	460.43	3.37	0.304	0.268	0.226
23	2,3-Dimethylbutane	C_6H_{14}	79298	86.177	499.98	3.13	0.358	0.269	0.246
24	2-Methylpentane	C_6H_{14}	107835	86.177	497.5	3.02	0.366	0.267	0.279
25	2,3-Dimethylpentane	C_7H_{16}	565593	100.204	537.35	2.88	0.396	0.255	0.292
26	2,3,3-Trimethylpentane	C_8H_{18}	560214	114.231	573.5	2.81	0.455	0.268	0.289
27	2,2,4-Trimethylpentane	C_8H_{18}	540841	114.231	543.96	2.56	0.465	0.264	0.301
28	Ethylene	C_2H_4	74851	28.054	282.34	5.03	0.132	0.283	0.086
29	Propylene	C_3H_6	115071	42.081	365.57	4.63	0.188	0.286	0.137
30	1-Butene	C_4H_8	106989	56.108	419.95	4.04	0.241	0.279	0.190
31	cis-2-Butene	C_4H_8	590181	56.108	435.58	4.24	0.233	0.273	0.204
32	trans-2-Butene	C_4H_8	624646	56.108	428.63	4.08	0.237	0.272	0.216
33	1-Pentene	C_5H_{10}	109671	70.134	464.78	3.56	0.295	0.271	0.236
34	1-Hexene	C_6H_{12}	592416	84.161	504.03	3.14	0.354	0.265	0.280
35	1-Heptene	C_7H_{14}	592767	98.188	537.29	2.82	0.413	0.261	0.330
36	1-Octene	C_8H_{16}	111660	112.215	566.65	2.57	0.460	0.251	0.377
37	1-Nonene	C_9H_{18}	124118	126.242	593.25	2.33	0.528	0.249	0.417
38	1-Decene	$C_{10}H_{20}$	872059	140.269	616.4	2.21	0.584	0.252	0.478
39	2-Methylpropene	C_4H_8	115117	56.108	417.9	3.98	0.238	0.272	0.192
40	2-Methyl-1-butene	C_5H_{10}	563462	70.134	465	3.45	0.292	0.261	0.237
41	2-Methyl-2-butene	C_5H_{10}	513359	70.134	471	3.38	0.292	0.252	0.272
42	1,2-Butadiene	C_4H_6	590192	54.092	452	4.36	0.220	0.255	0.166
43	1,3-Butadiene	C_4H_6	106990	54.092	425.17	4.30	0.220	0.268	0.192
44	2-Methyl-1,3-butadiene	C_5H_8	78795	68.119	484	3.85	0.277	0.265	0.158
45	Acetylene	C_2H_2	74862	26.038	308.32	6.15	0.113	0.271	0.188
46	Methylacetylene	C_3H_4	74997	40.065	402.39	5.62	0.164	0.276	0.216
47	Dimethylacetylene	C_4H_6	503173	54.092	473.2	4.87	0.221	0.274	0.239
48	3-Methyl-1-butyne	C_5H_8	598232	68.119	463.2	4.20	0.275	0.300	0.308
49	1-Pentyne	C_5H_8	627190	68.119	481.2	4.17	0.277	0.289	0.290
50	2-Pentyne	C_5H_8	627214	68.119	519	4.02	0.276	0.257	0.174
51	1-Hexyne	C_6H_{10}	693027	82.145	516.2	3.64	0.322	0.273	0.335
52	2-Hexyne	C_6H_{10}	764352	82.145	549	3.53	0.331	0.256	0.221
53	3-Hexyne	C_6H_{10}	928494	82.145	544	3.54	0.334	0.261	0.219
54	1-Heptyne	C_7H_{12}	628717	96.172	559	3.13	0.386	0.260	0.272
55	1-Octyne	C_8H_{14}	629050	110.199	585	2.82	0.441	0.256	0.323
56	Vinylacetylene	C_4H_4	689974	52.076	454	4.89	0.205	0.265	0.109

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	T_c, K	$P_c \times 1E\text{-}06$ Pa	V_c, $m^3/Kmol$	Z_c	Acentric factor
57	Cyclopentane	C_5H_{10}	287923	70.134	511.76	4.50	0.257	0.272	0.196
58	Methylcyclopentane	C_6H_{12}	96377	84.161	532.79	3.78	0.319	0.272	0.230
59	Ethylcyclopentane	C_7H_{14}	1640897	98.188	569.52	3.40	0.374	0.269	0.271
60	Cyclohexane	C_6H_{12}	110827	84.161	553.58	4.10	0.308	0.274	0.212
61	Methylcyclohexane	C_7H_{14}	108872	98.188	572.19	3.48	0.368	0.269	0.236
62	1,1-Dimethylcyclohexane	C_8H_{16}	590669	112.215	591.15	2.94	0.450	0.269	0.233
63	Ethylcyclohexane	C_8H_{16}	1678917	112.215	609.15	3.04	0.430	0.258	0.246
64	Cyclopentene	C_5H_8	142290	68.119	507	4.81	0.245	0.279	0.196
65	1-Methylcyclopentene	C_6H_{10}	693890	82.145	542	4.13	0.303	0.278	0.232
66	Cyclohexene	C_6H_{10}	110838	82.145	560.4	4.39	0.291	0.274	0.216
67	Benzene	C_6H_6	71432	78.114	562.16	4.88	0.261	0.273	0.209
68	Toluene	C_7H_8	108883	92.141	591.8	4.10	0.314	0.262	0.262
69	*o*-Xylene	C_8H_{10}	95476	106.167	630.33	3.74	0.374	0.267	0.311
70	*m*-Xylene	C_8H_{10}	108383	106.167	617.05	3.53	0.377	0.259	0.325
71	*p*-Xylene	C_8H_{10}	106423	106.167	616.23	3.50	0.381	0.260	0.320
72	Ethylbenzene	C_8H_{10}	100414	106.167	617.2	3.60	0.375	0.263	0.301
73	Propylbenzene	C_9H_{12}	103651	120.194	638.32	3.20	0.440	0.265	0.344
74	1,2,4-Trimethylbenzene	C_9H_{12}	95636	120.194	649.13	3.25	0.430	0.259	0.380
75	Isopropylbenzene	C_9H_{12}	98828	120.194	631.1	3.18	0.429	0.260	0.322
76	1,3,5-Trimethylbenzene	C_9H_{12}	108678	120.194	637.36	3.11	0.433	0.254	0.397
77	*p*-Isopropyltoluene	$C_{10}H_{14}$	99876	134.221	653.15	2.80	0.497	0.256	0.366
78	Naphthalene	$C_{10}H_8$	91203	128.174	748.35	3.99	0.413	0.265	0.296
79	Biphenyl	$C_{12}H_{10}$	92524	154.211	789.26	3.86	0.502	0.295	0.367
80	Styrene	C_8H_8	100425	104.152	636	3.82	0.352	0.254	0.295
81	*m*-Terphenyl	$C_{18}H_{14}$	92068	230.309	924.85	3.53	0.768	0.352	0.561
82	Methanol	CH_4O	67561	32.042	512.64	8.14	0.117	0.224	0.566
83	Ethanol	C_2H_6O	64175	46.069	513.92	6.12	0.168	0.240	0.643
84	1-Propanol	C_3H_8O	71238	60.096	536.78	5.12	0.220	0.252	0.617
85	1-Butanol	$C_4H_{10}O$	71363	74.123	563.05	4.34	0.276	0.256	0.585
86	2-Butanol	$C_4H_{10}O$	78922	74.123	536.05	4.20	0.270	0.254	0.574
87	2-Propanol	C_3H_8O	67630	60.096	508.3	4.79	0.221	0.250	0.670
88	2-Methyl-2-propanol	$C_4H_{10}O$	75650	74.123	506.21	3.99	0.276	0.262	0.613
89	1-Pentanol	$C_5H_{12}O$	71410	88.150	586.15	3.87	0.327	0.260	0.592
90	2-Methyl-1-butanol	$C_5H_{12}O$	137326	88.150	565	3.87	0.327	0.270	0.678
91	3-Methyl-1-butanol	$C_5H_{12}O$	123513	88.150	577.2	3.90	0.327	0.266	0.586
92	1-Hexanol	$C_6H_{14}O$	111273	102.177	611.35	3.46	0.381	0.259	0.572
93	1-Heptanol	$C_7H_{16}O$	111706	116.203	631.9	3.18	0.435	0.263	0.592
94	Cyclohexanol	$C_6H_{12}O$	108930	100.161	650	4.25	0.322	0.253	0.371
95	Ethylene glycol	$C_2H_6O_2$	107211	62.068	719.7	7.71	0.191	0.246	0.487
96	1,2-Propylene glycol	$C_3H_8O_2$	57556	76.095	626	6.04	0.239	0.277	1.102
97	Phenol	C_6H_6O	108952	94.113	694.25	6.06	0.229	0.240	0.438
98	*o*-Cresol	C_7H_8O	95487	108.140	697.55	5.06	0.282	0.246	0.438
99	*m*-Cresol	C_7H_8O	108394	108.140	705.85	4.52	0.312	0.240	0.444
100	*p*-Cresol	C_7H_8O	106445	108.140	704.65	5.15	0.277	0.244	0.507
101	Dimethyl ether	C_2H_6O	115106	46.069	400.1	5.27	0.171	0.271	0.192
102	Methyl ethyl ether	C_3H_8O	540670	60.096	437.8	4.47	0.221	0.271	0.229
103	Methyl n-propyl ether	$C_4H_{10}O$	557175	74.123	476.3	3.77	0.276	0.263	0.264
104	Methyl isopropyl ether	$C_4H_{10}O$	598538	74.123	464.5	3.89	0.276	0.278	0.280
105	Methyl n-butyl ether	$C_5H_{12}O$	628284	88.150	510	3.31	0.329	0.257	0.335
106	Methyl isobutyl ether	$C_5H_{12}O$	625445	88.150	497	3.41	0.331	0.273	0.310
107	Methyl tert-butyl ether	$C_5H_{12}O$	1634044	88.150	497.1	3.41	0.329	0.272	0.264
108	Diethyl ether	$C_4H_{10}O$	60297	74.123	466.7	3.64	0.281	0.264	0.281
109	Ethyl propyl ether	$C_5H_{12}O$	628320	88.150	500.23	3.37	0.336	0.273	0.347
110	Ethyl isopropyl ether	$C_5H_{12}O$	625547	88.150	489	3.41	0.329	0.276	0.306
111	Methyl phenyl ether	C_7H_8O	100663	108.140	645.6	4.27	0.337	0.268	0.353
112	Diphenyl ether	$C_{12}H_{10}O$	101848	170.211	766.8	3.10	0.503	0.244	0.441
113	Formaldehyde	CH_2O	50000	30.026	408	6.59	0.115	0.223	0.282
114	Acetaldehyde	C_2H_4O	75070	44.053	466	5.57	0.154	0.221	0.292
115	1-Propanal	C_3H_6O	123386	58.080	504.4	4.92	0.204	0.239	0.256
116	1-Butanal	C_4H_8O	123728	72.107	537.2	4.32	0.258	0.250	0.278
117	1-Pentanal	$C_5H_{10}O$	110623	86.134	566.1	3.97	0.313	0.264	0.347
118	1-Hexanal	$C_6H_{12}O$	66251	100.161	591	3.46	0.369	0.260	0.387
119	1-Heptanal	$C_7H_{14}O$	111717	114.188	617	3.18	0.421	0.261	0.427
120	1-Octanal	$C_8H_{16}O$	124130	128.214	638.1	2.97	0.474	0.265	0.474
121	1-Nonanal	$C_9H_{18}O$	124196	142.241	658	2.74	0.527	0.264	0.514
122	1-Decanal	$C_{10}H_{20}O$	112312	156.268	674.2	2.60	0.580	0.269	0.582

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	T_c, K	$P_c \times 1E\text{-}06$ Pa	V_c, m^3/Kmol	Z_c	Acentric factor
123	Acetone	C_3H_6O	67641	58.080	508.2	4.71	0.210	0.234	0.307
124	Methyl ethyl ketone	C_4H_8O	78933	72.107	535.5	4.12	0.267	0.247	0.320
125	2-Pentanone	$C_5H_{10}O$	107879	86.134	561.08	3.71	0.301	0.239	0.345
126	Methyl isopropyl ketone	$C_5H_{10}O$	563804	86.134	553	3.84	0.313	0.261	0.349
127	2-Hexanone	$C_6H_{12}O$	591786	100.161	587.05	3.31	0.369	0.250	0.395
128	Methyl isobutyl ketone	$C_6H_{12}O$	108101	100.161	571.4	3.27	0.369	0.254	0.389
129	3-Methyl-2-pentanone	$C_6H_{12}O$	565617	100.161	573	3.32	0.371	0.259	0.386
130	3-Pentanone	$C_5H_{10}O$	96220	86.134	560.95	3.70	0.336	0.267	0.340
131	Ethyl isopropyl ketone	$C_6H_{12}O$	565695	100.161	567	3.34	0.369	0.262	0.394
132	Diisopropyl ketone	$C_7H_{14}O$	565800	114.188	576	3.06	0.416	0.266	0.411
133	Cyclohexanone	$C_6H_{10}O$	108941	98.145	653	4.01	0.311	0.230	0.308
134	Methyl phenyl ketone	C_8H_8O	98862	120.151	709.5	3.85	0.386	0.252	0.365
135	Formic acid	CH_2O_2	64186	46.026	588	5.81	0.125	0.148	0.317
136	Acetic acid	$C_2H_4O_2$	64197	60.053	591.95	5.74	0.179	0.208	0.463
137	Propionic acid	$C_3H_6O_2$	79094	74.079	600.81	4.61	0.232	0.214	0.574
138	*n*-Butyric acid	$C_4H_8O_2$	107926	88.106	615.7	4.07	0.291	0.231	0.682
139	Isobutyric acid	$C_4H_8O_2$	79312	88.106	605	3.68	0.291	0.213	0.612
140	Benzoic acid	$C_7H_6O_2$	65850	122.123	751	4.47	0.347	0.248	0.603
141	Acetic anhydride	$C_4H_6O_3$	108247	102.090	606	3.97	0.290	0.229	0.450
142	Methyl formate	$C_2H_4O_2$	107313	60.053	487.2	5.98	0.173	0.255	0.254
143	Methyl acetate	$C_3H_6O_2$	79209	74.079	506.55	4.69	0.229	0.256	0.326
144	Methyl propionate	$C_4H_8O_2$	554121	88.106	530.6	4.03	0.284	0.259	0.349
145	Methyl n-butyrate	$C_5H_{10}O_2$	623427	102.133	554.5	3.48	0.340	0.257	0.378
146	Ethyl formate	$C_3H_6O_2$	109944	74.079	508.4	4.71	0.231	0.257	0.282
147	Ethyl acetate	$C_4H_8O_2$	141786	88.106	523.3	3.85	0.287	0.254	0.363
148	Ethyl propionate	$C_5H_{10}O_2$	105373	102.133	546	3.34	0.345	0.254	0.391
149	Ethyl n-butyrate	$C_6H_{12}O_2$	105544	116.160	571	2.94	0.403	0.249	0.399
150	*n*-Propyl formate	$C_4H_8O_2$	110747	88.106	538	4.03	0.286	0.257	0.310
151	*n*-Propyl acetate	$C_5H_{10}O_2$	109604	102.133	549.73	3.37	0.349	0.257	0.390
152	*n*-Butyl acetate	$C_6H_{12}O_2$	123864	116.160	579.15	3.11	0.389	0.251	0.410
153	Methyl benzoate	$C_8H_8O_2$	93583	136.150	693	3.59	0.436	0.272	0.421
154	Ethyl benzoate	$C_9H_{10}O_2$	93890	150.177	698	3.22	0.489	0.271	0.477
155	Vinyl acetate	$C_4H_6O_2$	108054	86.090	519.13	3.93	0.270	0.246	0.348
156	Methylamine	CH_5N	74895	31.057	430.05	7.41	0.154	0.319	0.279
157	Dimethylamine	C_2H_7N	124403	45.084	437.2	5.26	0.180	0.260	0.293
158	Trimethylamine	C_3H_9N	75503	59.111	433.25	4.10	0.254	0.289	0.210
159	Ethylamine	C_2H_7N	75047	45.084	456.15	5.59	0.202	0.298	0.283
160	Diethylamine	$C_4H_{11}N$	109897	73.138	496.6	3.67	0.301	0.268	0.300
161	Triethylamine	$C_6H_{15}N$	121448	101.192	535.15	3.04	0.389	0.266	0.316
162	*n*-Propylamine	C_3H_9N	107108	59.111	496.95	4.74	0.260	0.298	0.280
163	di-*n*-Propylamine	$C_6H_{15}N$	142847	101.192	550	3.11	0.401	0.273	0.446
164	Isopropylamine	C_3H_9N	75310	59.111	471.85	4.54	0.221	0.256	0.276
165	Diisopropylamine	$C_6H_{15}N$	108189	101.192	523.1	3.20	0.417	0.307	0.388
166	Aniline	C_6H_7N	62533	93.128	699	5.35	0.270	0.248	0.381
167	N-Methylaniline	C_7H_9N	100618	107.155	701.55	5.19	0.373	0.332	0.480
168	N,N-Dimethylaniline	$C_8H_{11}N$	121697	121.182	687.15	3.63	0.465	0.295	0.403
169	Ethylene oxide	C_2H_4O	75218	44.053	469.15	7.26	0.142	0.264	0.201
170	Furan	C_4H_4O	110009	68.075	490.15	5.55	0.218	0.297	0.205
171	Thiophene	C_4H_4S	110021	84.142	579.35	5.71	0.219	0.260	0.195
172	Pyridine	C_5H_5N	110861	79.101	619.95	5.64	0.254	0.278	0.239
173	Formamide	CH_3NO	75127	45.041	771	7.75	0.163	0.197	0.410
174	N,N-Dimethylformamide	C_3H_7NO	68122	73.095	649.6	4.37	0.262	0.212	0.312
175	Acetamide	C_2H_5NO	60355	59.068	761	6.57	0.215	0.223	0.419
176	N-Methylacetamide	C_3H_7NO	79163	73.095	718	5.00	0.267	0.224	0.437
177	Acetonitrile	C_2H_3N	75058	41.053	545.5	4.85	0.173	0.185	0.340
178	Propionitrile	C_3H_5N	107120	55.079	564.4	4.19	0.229	0.205	0.325
179	*n*-Butyronitrile	C_4H_7N	109740	69.106	582.25	3.79	0.278	0.217	0.371
180	Benzonitrile	C_7H_5N	100470	103.123	699.35	4.21	0.339	0.245	0.352
181	Methyl mercaptan	CH_4S	74931	48.109	469.95	7.23	0.145	0.268	0.158
182	Ethyl mercaptan	C_2H_6S	75081	62.136	499.15	5.49	0.206	0.273	0.188
183	*n*-Propyl mercaptan	C_3H_8S	107039	76.163	536.6	4.63	0.254	0.263	0.232
184	*n*-Butyl mercaptan	$C_4H_{10}S$	109795	90.189	570.1	3.97	0.307	0.257	0.272
185	Isobutyl mercaptan	$C_4H_{10}S$	513440	90.189	559	4.06	0.307	0.268	0.253
186	sec-Butyl mercaptan	$C_4H_{10}S$	513531	90.189	554	4.06	0.307	0.271	0.251
187	Dimethyl sulfide	C_2H_6S	75183	62.136	503.04	5.53	0.200	0.264	0.194
188	Methyl ethyl sulfide	C_3H_8S	624895	76.163	533	4.26	0.254	0.244	0.209
189	Diethyl sulfide	$C_4H_{10}S$	352932	90.189	557.15	3.96	0.320	0.273	0.294

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	T_c, K	$P_c \times 1E\text{-}06$ Pa	V_c, $m^3/Kmol$	Z_c	Acentric factor
190	Fluoromethane	CH_3F	593533	34.033	317.42	5.88	0.113	0.252	0.198
191	Chloromethane	CH_3Cl	74873	50.488	416.25	6.69	0.142	0.275	0.154
192	Trichloromethane	$CHCl_3$	67663	119.377	536.4	5.55	0.238	0.296	0.228
193	Tetrachloromethane	CCl_4	56235	153.822	556.35	4.54	0.274	0.270	0.191
194	Bromomethane	CH_3Br	74839	94.939	467	8.00	0.156	0.321	0.192
195	Fluoroethane	C_2H_5F	353366	48.060	375.31	5.01	0.164	0.263	0.218
196	Chloroethane	C_2H_5Cl	75003	64.514	460.35	5.46	0.155	0.221	0.206
197	Bromoethane	C_2H_5Br	74964	108.966	503.8	6.29	0.215	0.323	0.259
198	1-Chloropropane	C_3H_7Cl	540545	78.541	503.15	4.58	0.247	0.270	0.228
199	2-Chloropropane	C_3H_7Cl	75296	78.541	489	4.51	0.247	0.274	0.196
200	1,1-Dichloropropane	$C_3H_6Cl_2$	78999	112.986	560	4.24	0.292	0.266	0.253
201	1,2-Dichloropropane	$C_3H_6Cl_2$	78875	112.986	572	4.23	0.291	0.259	0.256
202	Vinyl chloride	C_2H_3Cl	75014	62.499	432	5.75	0.179	0.287	0.106
203	Fluorobenzene	C_6H_5F	462066	96.104	560.09	4.54	0.269	0.262	0.247
204	Chlorobenzene	C_6H_5Cl	108907	112.558	632.35	4.53	0.308	0.265	0.251
205	Bromobenzene	C_6H_5Br	108861	157.010	670.15	4.52	0.324	0.263	0.251
206	Air		132259100	28.951	132.45	3.79	0.092	0.318	0.000
207	Hydrogen	H_2	1333740	2.016	33.19	1.32	0.064	0.307	−0.215
208	Helium-4	He	7440597	4.003	5.2	0.23	0.058	0.305	−0.388
209	Neon	Ne	7440019	20.180	44.4	2.67	0.042	0.300	−0.038
210	Argon	Ar	7440371	39.948	150.86	4.90	0.075	0.292	0.000
211	Fluorine	F_2	7782414	37.997	144.12	5.17	0.067	0.287	0.053
212	Chlorine	Cl_2	7782505	70.905	417.15	7.79	0.124	0.279	0.073
213	Bromine	Br_2	7726956	159.808	584.15	10.28	0.135	0.286	0.128
214	Oxygen	O_2	7782447	31.999	154.58	5.02	0.074	0.287	0.020
215	Nitrogen	N_2	7727379	28.014	126.2	3.39	0.089	0.288	0.037
216	Ammonia	NH_3	7664417	17.031	405.65	11.30	0.072	0.241	0.253
217	Hydrazine	N_2H_4	302012	32.045	653.15	14.73	0.158	0.429	0.315
218	Nitrous oxide	N_2O	10024972	44.013	309.57	7.28	0.098	0.277	0.143
219	Nitric oxide	NO	10102439	30.006	180.15	6.52	0.058	0.252	0.585
220	Cyanogen	C_2N_2	460195	52.036	400.15	5.94	0.195	0.348	0.276
221	Carbon monoxide	CO	630080	28.010	132.92	3.49	0.095	0.300	0.048
222	Carbon dioxide	CO_2	124389	44.010	304.21	7.39	0.095	0.277	0.224
223	Carbon disulfide	CS_2	75150	76.143	552	8.04	0.160	0.280	0.118
224	Hydrogen fluoride	HF	7664393	20.006	461.15	6.49	0.069	0.117	0.383
225	Hydrogen chloride	HCl	7647010	36.461	324.65	8.36	0.082	0.253	0.134
226	Hydrogen bromide	HBr	10035106	80.912	363.15	8.46	0.100	0.280	0.069
227	Hydrogen cyanide	HCN	74908	27.026	456.65	5.35	0.139	0.195	0.407
228	Hydrogen sulfide	H_2S	7783064	34.082	373.53	9.00	0.099	0.287	0.096
229	Sulfur dioxide	SO_2	7446095	64.065	430.75	7.86	0.123	0.269	0.244
230	Sulfur trioxide	SO_3	7446119	80.064	490.85	8.19	0.127	0.255	0.423
231	Water	H_2O	7732185	18.015	647.13	21.94	0.056	0.228	0.343

Compiled from Daubert, T. E., R. P. Danner, H. M. Sibul, and C. C. Stebbins, DIPPR Data Compilation of Pure Compound Properties, Project 801 Sponsor Release, July, 1993, Design Institute for Physical Property Data, AIChE, New York, NY; and from Ambrose, D. "Vapour-Liquid Critical Properties", Report Chem

To calculate the compressibility factor Z:

Use the Soave modification of the Redlich – Kwong equation (SRK).

Compressibility factor Z is defined as:

$$Z = \frac{P\bar{v}}{\bar{R}T}$$

Pressure P above can be expressed from the SRK equation as:

$$P = \frac{\bar{R}T}{\bar{v}-b} - \alpha\frac{a}{\bar{v}(\bar{v}-b)}$$

where:

$$a = 0.42747\left(\bar{R}T_c\right)^2/P_c$$

$$b = 0.08664\,\bar{R}T_c/P_c$$

$$\alpha = \left[1+m\left(1-\sqrt{T_R}\right)\right]^2$$

$$m = 0.48508 + 1.55171\omega - 0.1561\omega^2$$

coefficient ω is called the Acentric factor

Substituting above expressions in the definition of Z we get an expression that only depends on reduced properties: $T_R = T/T_c$, $P_R = P/P_c$, $\bar{v}_R = \bar{v}/\bar{v}_c$.

It is a cubic equation in $\bar{v}$, having a well-known solution.

Substance	Specific Heat, c_p (kJ/kg · K)	Density, ρ (kg/m^3)	Thermal Conductivity, κ (W/m · K)
***Selected Solids,* 300K**			
Aluminium	0.903	2700	237
Coal, anthracite	1.260	1350	0.26
Copper	0.385	8930	401
Granite	0.775	2630	2.79
Iron	0.447	7870	80.2
Lead	0.129	11300	35.3
Sand	0.800	1520	0.27
Silver	0.235	10500	429
Soil	1.840	2050	0.52
Steel (AISI 302)	0.480	8060	15.1
Tin	0.227	7310	66.6
***Building Materials,* 300K**			
Brick, common	0.835	1920	0.72
Concrete (stone mix)	0.880	2300	1.4
Glass, plate	0.750	2500	1.4
Hardboard, siding	1.170	640	0.094
Limestone	0.810	2320	2.15
Plywood	1.220	545	0.12
Softwoods (fir, pine)	1.380	510	0.12
***Insulating Materials,* 300K**			
Blanket (glass fiber)	—	16	0.046
Cork	1.800	120	0.039
Duct liner (glass fiber, coated)	0.835	32	0.038
Polystyrene (extruded)	1.210	55	0.027
Vermiculite fill (flakes)	0.835	80	0.068
Saturated Liquids			
Ammonia, 300K	4.818	599.8	0.465
Mercury, 300K	0.139	13529	8.540
Refrigerant 22, 300K	1.267	1183.1	0.085
Refrigerant 134a, 300K	1.434	1199.7	0.081
Unused Engine Oil, 300K	1.909	884.1	0.145
Water, 275K	4.211	999.9	0.574
300K	4.179	996.5	0.613
325K	4.182	987.1	0.645
350K	4.195	973.5	0.668
375K	4.220	956.8	0.681
400K	4.256	937.4	0.688

Source: Drawn from several sources, these data are only representative. Values can vary depending on temperature, purity, moisture content, and other factors.

T	c_p	h	u	s^0	P_r	v_r
K	kJ/kg K	kJ/kg	kJ/kg	kJ/kg K		
200	0.9991	199.95	142.54	1.2956	0.335798	1706.679
210	0.9993	209.94	149.66	1.3444	0.397958	1512.105
220	0.9996	219.94	156.79	1.3909	0.467929	1347.235
230	0.9999	229.93	163.91	1.4353	0.546279	1206.461
240	1.0003	239.94	171.04	1.4779	0.633596	1085.423
250	1.0008	249.94	178.18	1.5187	0.730482	980.6876
260	1.0014	259.95	185.32	1.5580	0.837559	889.5259
270	1.0021	269.97	192.47	1.5958	0.955463	809.7489
280	1.0028	279.99	199.62	1.6322	1.084852	739.5851
290	1.0036	290.03	206.78	1.6674	1.226399	677.5894
300	1.0045	300.07	213.95	1.7015	1.380799	622.5743
310	1.0054	310.12	221.13	1.7344	1.548764	573.5574
320	1.0064	320.17	228.32	1.7664	1.731026	529.7204
330	1.0075	330.24	235.52	1.7973	1.928339	490.378
340	1.0086	340.32	242.73	1.8274	2.141474	454.9529
350	1.0098	350.42	249.95	1.8567	2.371228	422.956
360	1.0110	360.52	257.18	1.8852	2.618414	393.9713
370	1.0123	370.64	264.43	1.9129	2.883872	367.6429
380	1.0137	380.77	271.69	1.9399	3.168462	343.6652
390	1.0151	390.91	278.96	1.9662	3.473067	321.7746
400	1.0165	401.07	286.25	1.9920	3.798596	301.7431
410	1.0180	411.24	293.55	2.0171	4.145978	283.3722
420	1.0196	421.43	300.87	2.0416	4.516171	266.489
430	1.0211	431.63	308.20	2.0656	4.910156	250.9421
440	1.0228	441.85	315.55	2.0891	5.328939	236.5987
450	1.0244	452.09	322.92	2.1121	5.773554	223.3416
460	1.0261	462.34	330.30	2.1347	6.245062	211.0676
470	1.0279	472.61	337.70	2.1568	6.744549	199.685
480	1.0296	482.90	345.11	2.1784	7.273131	189.1125
490	1.0314	493.20	352.55	2.1997	7.831951	179.2778
500	1.0333	503.53	360.00	2.2205	8.422184	170.1162
510	1.0351	513.87	367.47	2.2410	9.04503	161.5699
520	1.0370	524.23	374.96	2.2611	9.701724	153.5871
530	1.0390	534.61	382.47	2.2809	10.39353	146.1212
540	1.0409	545.01	390.00	2.3003	11.12173	139.1303
550	1.0429	555.43	397.55	2.3194	11.88767	132.5764
560	1.0449	565.87	405.12	2.3383	12.6927	126.4254
570	1.0469	576.32	412.71	2.3568	13.53821	120.6463
580	1.0489	586.80	420.32	2.3750	14.42562	115.211
590	1.0510	597.30	427.94	2.3929	15.35639	110.0939
600	1.0530	607.82	435.59	2.4106	16.33203	105.2717
610	1.0551	618.36	443.26	2.4280	17.35405	100.7232
620	1.0572	628.92	450.96	2.4452	18.42401	96.42904
630	1.0593	639.51	458.67	2.4621	19.54353	92.37148
640	1.0615	650.11	466.40	2.4788	20.71424	88.53428
650	1.0636	660.74	474.16	2.4953	21.9378	84.90254
660	1.0658	671.38	481.93	2.5116	23.21594	81.46257
670	1.0679	682.05	489.73	2.5276	24.5504	78.20179
680	1.0701	692.74	497.55	2.5435	25.94297	75.1086
690	1.0722	703.45	505.39	2.5591	27.39548	72.17232
700	1.0744	714.19	513.25	2.5745	28.90979	69.38306
710	1.0766	724.94	521.14	2.5898	30.48782	66.73172
720	1.0788	735.72	529.04	2.6049	32.13152	64.20985
730	1.0810	746.52	536.97	2.6198	33.84287	61.80962
740	1.0832	757.34	544.92	2.6345	35.62391	59.52379
750	1.0854	768.18	552.90	2.6490	37.47671	57.34561
760	1.0876	779.05	560.89	2.6634	39.40339	55.26885
770	1.0897	789.93	568.91	2.6777	41.40611	53.28767
780	1.0919	800.84	576.94	2.6917	43.48707	51.39665
790	1.0941	811.77	585.00	2.7057	45.64853	49.59075
800	1.0963	822.72	593.08	2.7194	47.89277	47.86526
820	1.1006	844.69	609.31	2.7466	52.63902	44.63818
840	1.1050	866.75	625.63	2.7731	57.74507	41.68356
860	1.1093	888.89	642.03	2.7992	63.23091	38.9735
880	1.1135	911.12	658.52	2.8247	69.11732	36.48348
900	1.1178	933.43	675.09	2.8498	75.4258	34.19188

Air specific heat c_P as a function of temperature was obtained out of values from https://janaf.nist.gov/ for different materials assuming air is composed of: 78.08% N_2, 20.95% of O_2, 0.93% of Ar and 0.04% of CO_2.

A correlation for air c_P as a function of temperature T was the obtained by curve fitting (error < 0.3%)

Finally, all other properties were obtained by integration of $c_P(T)$ as follows:

$$h = \int c_p\,dT; \quad s^0 = \int \frac{c_p}{T}\,dT; \quad P_r(T) = \exp\left(\int \frac{c_p(T)}{RT}\,dT\right); \quad v_r(T) = \exp\left(-\int \frac{c_v(T)}{RT}\,dT\right)$$

For an isentropic process: $P_2/P_1 = P_r(T_2)/P_r(T_1)$; $v_2/v_1 = v_r(T_2)/v_r(T_1)$;

T	c_p	h	u	s^0	P_r	v_r
K	kJ/kg K	kJ/kg	kJ/kg	kJ/kg K		
920	1.1220	955.83	691.75	2.8744	82.17867	32.07961
940	1.1261	978.31	708.49	2.8986	89.39903	30.12975
960	1.1302	1,000.87	725.31	2.9223	97.11077	28.32724
980	1.1342	1,023.52	742.21	2.9457	105.3386	26.6587
1000	1.1382	1,046.24	759.19	2.9686	114.1081	25.11215
1020	1.1421	1,069.04	776.26	2.9912	123.4456	23.67691
1040	1.1459	1,091.92	793.39	3.0134	133.3783	22.34336
1060	1.1497	1,114.88	810.61	3.0353	143.9344	21.10288
1080	1.1534	1,137.91	827.90	3.0568	155.1427	19.9477
1100	1.1570	1,161.02	845.26	3.0780	167.033	18.87082
1120	1.1606	1,184.19	862.70	3.0989	179.6361	17.8659
1140	1.1641	1,207.44	880.21	3.1195	192.9833	16.92721
1160	1.1675	1,230.76	897.78	3.1398	207.1073	16.04955
1180	1.1708	1,254.14	915.42	3.1597	222.0413	15.2282
1200	1.1741	1,277.59	933.13	3.1794	237.8196	14.45886
1220	1.1772	1,301.10	950.90	3.1989	254.4772	13.73762
1240	1.1803	1,324.68	968.74	3.2180	272.0502	13.0609
1260	1.1833	1,348.31	986.63	3.2370	290.5756	12.42544
1280	1.1863	1,372.01	1,004.59	3.2556	310.0912	11.82826
1300	1.1891	1,395.77	1,022.60	3.2740	330.6358	11.26663
1320	1.1919	1,419.58	1,040.67	3.2922	352.2491	10.73803
1340	1.1946	1,443.44	1,058.80	3.3101	374.9716	10.24016
1360	1.1972	1,467.36	1,076.97	3.3279	398.845	9.770913
1380	1.1997	1,491.33	1,095.20	3.3454	423.9118	9.328333
1400	1.2022	1,515.35	1,113.48	3.3626	450.2153	8.910626
1420	1.2046	1,539.42	1,131.81	3.3797	477.7999	8.516138
1440	1.2069	1,563.53	1,150.18	3.3966	506.7109	8.143341
1460	1.2091	1,587.69	1,168.60	3.4132	536.9947	7.790822
1480	1.2113	1,611.89	1,187.06	3.4297	568.6983	7.457276
1500	1.2134	1,636.14	1,205.57	3.4460	601.87	7.141493
1520	1.2154	1,660.43	1,224.12	3.4621	636.5589	6.842352
1540	1.2174	1,684.76	1,242.70	3.4780	672.8151	6.558815
1560	1.2192	1,709.12	1,261.33	3.4937	710.6897	6.289918

T	c_p	h	u	s^0	P_r	v_r
K	kJ/kg K	kJ/kg	kJ/kg	kJ/kg K		
1580	1.2211	1,733.53	1,279.99	3.5092	750.2348	6.034764
1600	1.2228	1,757.97	1,298.69	3.5246	791.5035	5.79252
1620	1.2246	1,782.44	1,317.42	3.5398	834.5498	5.562412
1640	1.2262	1,806.95	1,336.19	3.5548	879.4288	5.343718
1660	1.2278	1,831.49	1,354.99	3.5697	926.1968	5.135766
1680	1.2294	1,856.06	1,373.82	3.5844	974.9108	4.937929
1700	1.2309	1,880.66	1,392.68	3.5990	1025.629	4.749622
1750	1.2344	1,942.29	1,439.96	3.6347	1161.585	4.317053
1800	1.2377	2,004.10	1,487.41	3.6695	1311.398	3.93313
1850	1.2408	2,066.06	1,535.02	3.7035	1476.069	3.591414
1900	1.2437	2,128.18	1,582.78	3.7366	1656.644	3.286433
1950	1.2465	2,190.43	1,630.69	3.7690	1854.219	3.01352
2000	1.2491	2,252.82	1,678.72	3.8005	2069.939	2.768681
2050	1.2517	2,315.34	1,726.89	3.8314	2305.004	2.548488
2100	1.2543	2,377.99	1,775.19	3.8616	2560.671	2.349989
2150	1.2568	2,440.76	1,823.61	3.8912	2838.255	2.170638
2200	1.2593	2,503.67	1,872.16	3.9201	3139.133	2.00823
2250	1.2619	2,566.70	1,920.84	3.9484	3464.747	1.86085
2300	1.2645	2,629.86	1,969.65	3.9762	3816.607	1.726835
2350	1.2672	2,693.15	2,018.59	4.0034	4196.29	1.604733
2400	1.2699	2,756.58	2,067.66	4.0301	4605.444	1.493276
2450	1.2726	2,820.14	2,116.87	4.0563	5045.786	1.391354
2500	1.2753	2,883.84	2,166.22	4.0821	5519.101	1.297992
2550	1.2780	2,947.67	2,215.70	4.1073	6027.239	1.212334
2600	1.2807	3,011.64	2,265.31	4.1322	6572.109	1.133624
2650	1.2832	3,075.74	2,315.06	4.1566	7155.67	1.061197
2700	1.2856	3,139.96	2,364.93	4.1806	7779.921	0.994464
2750	1.2878	3,204.29	2,414.91	4.2042	8446.885	0.932903
2800	1.2896	3,268.73	2,465.00	4.2274	9158.589	0.876052
2850	1.2910	3,333.25	2,515.16	4.2503	9917.037	0.823499
2900	1.2918	3,397.82	2,565.38	4.2727	10724.18	0.774879
2950	1.2920	3,462.42	2,615.63	4.2948	11581.89	0.729866
3000	1.2914	3,527.01	2,665.86	4.3165	12491.88	0.688167

Air specific heat c_P as a function of temperature was obtained out of values from https://janaf.nist.gov/ for different materials assuming air is composed of: 78.08% N_2, 20.95% of O_2, 0.93% of Ar and 0.04% of CO_2.
A correlation for air c_P as a function of temperature T was the obtained by curve fitting (error < 0.3%)
Finally, all other properties were obtained by integration of $c_P(T)$ as follows:

$$h = \int c_p\,dT; \quad s^0 = \int \frac{c_p}{T}\,dT; \quad P_r(T) = \exp\left(\int \frac{c_p(T)}{RT}\,dT\right); \quad v_r(T) = \exp\left(-\int \frac{c_v(T)}{RT}\,dT\right)$$

For an isentropic process: $P_2/P_1 = P_r(T_2)/P_r(T_1)$; $v_2/v_1 = v_r(T_2)/v_r(T_1)$;

N_2: μ = 28.0134 g/mol; *h formation* h_f^o = 0 kJ/kmol $\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy $\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation						N: μ = 14.0067 g/mol; *h formation* h_f^o = 472,683 kJ/kmol $\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy $\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation					
T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$	T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol	K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	0	0	0	0	0	0	470,820
100	29.104	159.811	2,902	2,071	0	100	20.786	130.593	2,078	1,247	466,379
200	29.107	179.985	5,813	4,150	0	200	20.786	145.001	4,157	2,494	461,070
298.15	29.124	191.609	8,670	6,191	0	298.15	20.786	153.3	6,197	3,718	455,540
300	29.125	191.789	8,724	6,230	0	300	20.786	153.429	6,235	3,741	455,434
400	29.249	200.181	11,641	8,315	0	400	20.786	159.408	8,314	4,988	449,587
500	29.58	206.739	14,581	10,424	0	500	20.786	164.047	10,393	6,236	443,584
600	30.11	212.176	17,564	12,575	0	600	20.786	167.836	12,471	7,482	437,461
700	30.754	216.866	20,607	14,787	0	700	20.786	171.041	14,550	8,730	431,242
800	31.433	221.017	23,716	17,064	0	800	20.786	173.816	16,628	9,976	424,945
900	32.09	224.757	26,893	19,410	0	900	20.786	176.264	18,707	11,224	418,584
1000	32.697	228.17	30,133	21,819	0	1000	20.786	178.454	20,786	12,472	412,171
1100	33.241	231.313	33,430	24,284	0	1100	20.786	180.436	22,864	13,718	405,713
1200	33.723	234.226	36,779	26,802	0	1200	20.786	182.244	24,943	14,966	399,217
1300	34.147	236.943	40,173	29,364	0	1300	20.786	183.908	27,021	16,212	392,688
1400	34.518	239.487	43,606	31,966	0	1400	20.786	185.448	29,100	17,460	386,131
1500	34.843	241.88	47,075	34,603	0	1500	20.786	186.882	31,179	18,707	379,548
1600	35.128	244.138	50,574	37,271	0	1600	20.786	188.224	33,257	19,954	372,943
1700	35.378	246.275	54,099	39,964	0	1700	20.786	189.484	35,336	21,201	366,318
1800	35.6	248.304	57,648	42,682	0	1800	20.787	190.672	37,415	22,449	359,674
1900	35.796	250.234	61,218	45,420	0	1900	20.788	191.796	39,493	23,695	353,014
2000	35.971	252.074	64,807	48,178	0	2000	20.79	192.863	41,572	24,943	346,339
2100	36.126	253.833	68,412	50,952	0	2100	20.793	193.877	43,651	26,191	339,650
2200	36.268	255.517	72,031	53,739	0	2200	20.797	194.844	45,731	27,439	332,947
2300	36.395	257.132	75,665	56,542	0	2300	20.804	195.769	47,811	28,688	326,233
2400	36.511	258.684	79,310	59,355	0	2400	20.813	196.655	49,892	29,937	319,507
2500	36.616	260.176	82,966	62,180	0	2500	20.826	197.504	51,974	31,188	312,770
2600	36.713	261.614	86,633	65,015	0	2600	20.843	198.322	54,057	32,439	306,024
2700	36.801	263.001	90,309	67,860	0	2700	20.864	199.109	56,142	33,693	299,268
2800	36.883	264.341	93,993	70,712	0	2800	20.891	199.868	58,230	34,949	292,502
2900	36.959	265.637	97,685	73,573	0	2900	20.924	200.601	60,321	36,209	285,728
3000	37.03	266.891	101,385	76,442	0	3000	20.963	201.311	62,415	37,472	278,946
3100	37.096	268.106	105,091	79,316	0	3100	21.01	202	64,514	38,739	272,155
3200	37.158	269.285	108,804	82,198	0	3200	21.064	202.667	66,617	40,011	265,357
3300	37.216	270.429	112,522	85,084	0	3300	21.126	203.317	68,727	41,289	258,550
3400	37.271	271.541	116,247	87,978	0	3400	21.197	203.948	70,843	42,574	251,736
3500	37.323	272.622	119,976	90,875	0	3500	21.277	204.564	72,966	43,865	244,915
3600	37.373	273.675	123,711	93,779	0	3600	21.365	205.164	75,099	45,167	238,086
3700	37.42	274.699	127,451	96,687	0	3700	21.463	205.751	77,240	46,476	231,249
3800	37.465	275.698	131,195	99,600	0	3800	21.569	206.325	79,391	47,796	224,405
3900	37.508	276.671	134,944	102,517	0	3900	21.685	206.887	81,554	49,127	217,554
4000	37.55	277.622	138,697	105,439	0	4000	21.809	207.437	83,729	50,471	210,695
4100	37.59	278.549	142,454	108,365	0	4100	21.941	207.977	85,916	51,827	203,829
4200	37.629	279.456	146,215	111,294	0	4200	22.082	208.508	88,117	53,196	196,955
4300	37.666	280.341	149,979	114,227	0	4300	22.231	209.029	90,333	54,581	190,073
4400	37.702	281.208	153,748	117,164	0	4400	22.388	209.542	92,564	55,980	183,183
4500	37.738	282.056	157,520	120,105	0	4500	22.551	210.047	94,811	57,396	176,285
4600	37.773	282.885	161,295	123,048	0	4600	22.722	210.544	97,074	58,827	169,379
4700	37.808	283.698	165,075	125,997	0	4700	22.899	211.035	99,355	60,277	162,465
4800	37.843	284.494	168,857	128,947	0	4800	23.081	211.519	101,654	61,744	155,542
4900	37.878	285.275	172,643	131,902	0	4900	23.269	211.997	103,972	63,231	148,610
5000	37.912	286.041	176,433	134,861	0	5000	23.461	212.469	106,308	64,736	141,670

O_2: μ = 31.998 g/mol; *h formation* h_f^o = 0 kJ/kmol $\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy $\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation						**O**: μ = 15.999 g/mol; *h formation* h_f^o = 249,173 kJ/kmol $\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy $\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation					
T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$	T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol	K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	0	0	0	0	0	0	246,790
100	29.106	173.307	2,904	2,073	0	100	23.703	135.947	2,207	1,376	242,615
200	29.126	193.485	5,815	4,152	0	200	22.734	152.153	4,539	2,876	237,339
298.15	29.376	205.147	8,683	6,204	0	298.15	21.911	161.058	6,725	4,246	231,736
300	29.385	205.329	8,737	6,243	0	300	21.901	161.194	6,766	4,272	231,628
400	30.106	213.871	11,708	8,382	0	400	21.482	167.43	8,932	5,606	225,670
500	31.091	220.693	14,767	10,610	0	500	21.257	172.197	11,068	6,911	219,549
600	32.09	226.451	17,927	12,938	0	600	21.124	176.06	13,187	8,198	213,312
700	32.981	231.466	21,182	15,362	0	700	21.04	179.31	15,295	9,475	206,990
800	33.733	235.921	24,518	17,866	0	800	20.984	182.116	17,396	10,744	200,602
900	34.355	239.931	27,924	20,441	0	900	20.944	184.585	19,492	12,009	194,163
1000	34.87	243.578	31,386	23,072	0	1000	20.915	186.79	21,585	13,271	187,681
1100	35.3	246.922	34,895	25,749	0	1100	20.893	188.782	23,675	14,529	181,165
1200	35.667	250.01	38,444	28,467	0	1200	20.877	190.599	25,764	15,787	174,619
1300	35.988	252.878	42,027	31,218	0	1300	20.864	192.27	27,851	17,042	168,047
1400	36.277	255.556	45,640	34,000	0	1400	20.853	193.816	29,937	18,297	161,453
1500	36.544	258.068	49,282	36,810	0	1500	20.845	195.254	32,021	19,549	154,840
1600	36.796	260.434	52,949	39,646	0	1600	20.838	196.599	34,106	20,803	148,210
1700	37.04	262.672	56,641	42,506	0	1700	20.833	197.862	36,189	22,054	141,564
1800	37.277	264.796	60,356	45,390	0	1800	20.83	199.053	38,272	23,306	134,905
1900	37.51	266.818	64,096	48,298	0	1900	20.827	200.179	40,355	24,557	128,234
2000	37.741	268.748	67,858	51,229	0	2000	20.826	201.247	42,438	25,809	121,552
2100	37.969	270.595	71,644	54,184	0	2100	20.827	202.263	44,521	27,061	114,860
2200	38.195	272.366	75,452	57,160	0	2200	20.83	203.232	46,603	28,311	108,159
2300	38.419	274.069	79,283	60,160	0	2300	20.835	204.158	48,687	29,564	101,450
2400	38.639	275.709	83,136	63,181	0	2400	20.841	205.045	50,770	30,815	94,734
2500	38.856	277.29	87,011	66,225	0	2500	20.851	205.896	52,855	32,069	88,012
2600	39.068	278.819	90,907	69,289	0	2600	20.862	206.714	54,941	33,323	81,284
2700	39.276	280.297	94,824	72,375	0	2700	20.877	207.502	57,028	34,579	74,551
2800	39.478	281.729	98,762	75,481	0	2800	20.894	208.261	59,116	35,835	67,814
2900	39.674	283.118	102,719	78,607	0	2900	20.914	208.995	61,206	37,094	61,072
3000	39.864	284.466	106,696	81,753	0	3000	20.937	209.704	63,299	38,356	54,327
3100	40.048	285.776	110,692	84,917	0	3100	20.963	210.391	65,394	39,619	47,578
3200	40.225	287.05	114,706	88,100	0	3200	20.991	211.057	67,492	40,886	40,826
3300	40.395	288.291	118,737	91,299	0	3300	21.022	211.704	69,592	42,154	34,071
3400	40.559	289.499	122,785	94,516	0	3400	21.056	212.332	71,696	43,427	27,315
3500	40.716	290.677	126,848	97,747	0	3500	21.092	212.943	73,804	44,703	20,555
3600	40.868	291.826	130,928	100,996	0	3600	21.13	213.537	75,915	45,983	13,794
3700	41.013	292.948	135,022	104,258	0	3700	21.17	214.117	78,030	47,266	7,030
3800	41.154	294.044	139,130	107,535	0	3800	21.213	214.682	80,149	48,554	265
3900	41.289	295.115	143,252	110,825	0	3900	21.257	215.234	82,272	49,845	-6,501
4000	41.421	296.162	147,388	114,130	0	4000	21.302	215.772	84,400	51,142	-13,270
4100	41.549	297.186	151,537	117,448	0	4100	21.349	216.299	86,533	52,444	-20,040
4200	41.674	298.189	155,698	120,777	0	4200	21.397	216.814	88,670	53,749	-26,811
4300	41.798	299.171	159,871	124,119	0	4300	21.445	217.318	90,812	55,060	-33,583
4400	41.92	300.133	164,057	127,473	0	4400	21.495	217.812	92,959	56,375	-40,358
4500	42.042	301.076	168,255	130,840	0	4500	21.545	218.295	95,111	57,696	-47,133
4600	42.164	302.002	172,466	134,219	0	4600	21.596	218.769	97,268	59,021	-53,909
4700	42.287	302.91	176,688	137,610	0	4700	21.647	219.234	99,430	60,352	-60,687
4800	42.413	303.801	180,923	141,013	0	4800	21.697	219.69	101,597	61,687	-67,465
4900	42.542	304.677	185,171	144,430	0	4900	21.748	220.138	103,770	63,029	-74,244
5000	42.675	305.538	189,432	147,860	0	5000	21.799	220.578	105,947	64,375	-81,025

H_2: μ = 2.0156 g/mol; *h formation* h_f^o = 0 kJ/kmol $\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy $\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation						**H**: μ = 1.0078 g/mol; *h formation* h_f^o = 217,999 kJ/kmol $\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy $\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation					
T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$	T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol	K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	0	0	0	0	0	0	0
100	28.154	100.727	2,999	2,168	0	100	20.786	92.009	2,078	1,247	1,246,550
200	27.447	119.412	5,693	4,030	0	200	20.786	106.417	4,157	2,494	2,494,100
298.15	28.836	130.68	8,467	5,988	0	298.15	20.786	114.716	6,197	3,718	3,718,032
300	28.849	130.858	8,520	6,026	0	300	20.786	114.845	6,235	3,741	3,740,650
400	29.181	139.216	11,426	8,100	0	400	20.786	120.825	8,314	4,988	4,988,200
500	29.26	145.737	14,349	10,192	0	500	20.786	125.463	10,393	6,236	6,235,750
600	29.327	151.077	17,278	12,289	0	600	20.786	129.253	12,471	7,482	7,482,300
700	29.441	155.606	20,216	14,396	0	700	20.786	132.457	14,550	8,730	8,729,850
800	29.624	159.548	23,169	16,517	0	800	20.786	135.232	16,628	9,976	9,976,400
900	29.881	163.051	26,143	18,660	0	900	20.786	137.681	18,707	11,224	11,223,950
1000	30.205	166.216	29,147	20,833	0	1000	20.786	139.871	20,786	12,472	12,471,500
1100	30.581	169.112	32,186	23,040	0	1100	20.786	141.852	22,864	13,718	13,718,050
1200	30.992	171.79	35,264	25,287	0	1200	20.786	143.66	24,943	14,966	14,965,600
1300	31.423	174.288	38,385	27,576	0	1300	20.786	145.324	27,021	16,212	16,212,150
1400	31.861	176.633	41,549	29,909	0	1400	20.786	146.865	29,100	17,460	17,459,700
1500	32.298	178.846	44,757	32,285	0	1500	20.786	148.299	31,179	18,707	18,707,250
1600	32.725	180.944	48,008	34,705	0	1600	20.786	149.64	33,257	19,954	19,953,800
1700	33.139	182.94	51,302	37,167	0	1700	20.786	150.9	35,336	21,201	21,201,350
1800	33.537	184.846	54,636	39,670	0	1800	20.786	152.088	37,414	22,448	22,447,900
1900	33.917	186.669	58,008	42,210	0	1900	20.786	153.212	39,493	23,695	23,695,450
2000	34.28	188.418	61,418	44,789	0	2000	20.786	154.278	41,572	24,943	24,943,000
2100	34.624	190.099	64,864	47,404	0	2100	20.786	155.293	43,650	26,190	26,189,550
2200	34.952	191.718	68,343	50,051	0	2200	20.786	156.26	45,729	27,437	27,437,100
2300	35.263	193.278	71,854	52,731	0	2300	20.786	157.184	47,807	28,684	28,683,650
2400	35.559	194.785	75,395	55,440	0	2400	20.786	158.068	49,886	29,931	29,931,200
2500	35.842	196.243	78,965	58,179	0	2500	20.786	158.917	51,965	31,179	31,178,750
2600	36.111	197.654	82,563	60,945	0	2600	20.786	159.732	54,043	32,425	32,425,300
2700	36.37	199.021	86,187	63,738	0	2700	20.786	160.516	56,122	33,673	33,672,850
2800	36.618	200.349	89,836	66,555	0	2800	20.786	161.272	58,201	34,920	34,920,400
2900	36.856	201.638	93,510	69,398	0	2900	20.786	162.002	60,279	36,167	36,166,950
3000	37.087	202.891	97,207	72,264	0	3000	20.786	162.706	62,358	37,415	37,414,500
3100	37.311	204.111	100,927	75,152	0	3100	20.786	163.388	64,436	38,661	38,661,050
3200	37.528	205.299	104,669	78,063	0	3200	20.786	164.048	66,515	39,909	39,908,600
3300	37.74	206.457	108,433	80,995	0	3300	20.786	164.688	68,594	41,156	41,156,150
3400	37.946	207.587	112,217	83,948	0	3400	20.786	165.308	70,672	42,403	42,402,700
3500	38.149	208.69	116,022	86,921	0	3500	20.786	165.911	72,751	43,650	43,650,250
3600	38.348	209.767	119,847	89,915	0	3600	20.786	166.496	74,829	44,897	44,896,800
3700	38.544	210.821	123,691	92,927	0	3700	20.786	167.066	76,908	46,144	46,144,350
3800	38.738	211.851	127,556	95,961	0	3800	20.786	167.62	78,987	47,392	47,391,900
3900	38.928	212.86	131,439	99,012	0	3900	20.786	168.16	81,065	48,638	48,638,450
4000	39.116	213.848	135,341	102,083	0	4000	20.786	168.686	83,144	49,886	49,886,000
4100	39.301	214.816	139,262	105,173	0	4100	20.786	169.2	85,222	51,133	51,132,550
4200	39.484	215.765	143,201	108,280	0	4200	20.786	169.7	87,301	52,380	52,380,100
4300	39.665	216.696	147,159	111,407	0	4300	20.786	170.19	89,380	53,628	53,627,650
4400	39.842	217.61	151,134	114,550	0	4400	20.786	170.667	91,458	54,874	54,874,200
4500	40.017	218.508	155,127	117,712	0	4500	20.786	171.135	93,537	56,122	56,121,750
4600	40.188	219.389	159,137	120,890	0	4600	20.786	171.591	95,615	57,368	57,368,300
4700	40.355	220.255	163,165	124,087	0	4700	20.786	172.038	97,694	58,616	58,615,850
4800	40.518	221.106	167,208	127,298	0	4800	20.786	172.476	99,773	59,863	59,863,400
4900	40.676	221.943	171,268	130,527	0	4900	20.786	172.905	101,851	61,110	61,109,950
5000	40.829	222.767	175,343	133,771	0	5000	20.786	173.325	103,930	62,358	62,357,500

OH: μ = 17.0068 g/mol; *h formation* h_f^o = 38,987 kJ/kmol
$\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy
$\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation

T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	38,390
100	32.627	149.59	3,033	2,202	37,214
200	30.777	171.592	6,196	4,533	35,803
298.15	29.986	183.708	9,172	6,693	34,277
300	29.977	183.894	9,227	6,733	34,248
400	29.65	192.466	12,207	8,881	32,660
500	29.521	199.066	15,164	11,007	31,070
600	29.527	204.447	18,115	13,126	29,493
700	29.663	209.007	21,074	15,254	27,935
800	29.917	212.983	24,052	17,400	26,399
900	30.264	216.526	27,060	19,577	24,884
1000	30.676	219.736	30,107	21,793	23,391
1100	31.124	222.68	33,196	24,050	21,916
1200	31.586	225.408	36,332	26,355	20,458
1300	32.046	227.955	39,514	28,705	19,014
1400	32.492	230.346	42,741	31,101	17,583
1500	32.917	232.602	46,011	33,539	16,163
1600	33.319	234.74	49,323	36,020	14,753
1700	33.694	236.771	52,674	38,539	13,352
1800	34.044	238.707	56,061	41,095	11,960
1900	34.369	240.557	59,482	43,684	10,575
2000	34.67	242.327	62,934	46,305	9,197
2100	34.95	244.026	66,415	48,955	7,826
2200	35.209	245.658	69,924	51,632	6,462
2300	35.449	247.228	73,457	54,334	5,103
2400	35.673	248.741	77,013	57,058	3,750
2500	35.881	250.202	80,591	59,805	2,404
2600	36.075	251.613	84,189	62,571	1,063
2700	36.256	252.978	87,805	65,356	-271
2800	36.426	254.3	91,439	68,158	-1,600
2900	36.586	255.581	95,090	70,978	-2,924
3000	36.736	256.824	98,756	73,813	-4,241
3100	36.878	258.031	102,437	76,662	-5,552
3200	37.013	259.203	106,132	79,526	-6,858
3300	37.14	260.344	109,839	82,401	-8,158
3400	37.261	261.455	113,559	85,290	-9,452
3500	37.376	262.537	117,291	88,190	-10,741
3600	37.486	263.591	121,035	91,103	-12,023
3700	37.592	264.62	124,789	94,025	-13,300
3800	37.693	265.624	128,553	96,958	-14,570
3900	37.791	266.604	132,327	99,900	-15,834
4000	37.885	267.562	136,111	102,853	-17,093
4100	37.976	268.499	139,904	105,815	-18,346
4200	38.064	269.415	143,706	108,785	-19,593
4300	38.15	270.311	147,517	111,765	-20,833
4400	38.233	271.189	151,336	114,752	-22,068
4500	38.315	272.05	155,163	117,748	-23,297
4600	38.394	272.893	158,999	120,752	-24,520
4700	38.472	273.719	162,842	123,764	-25,737
4800	38.549	274.53	166,693	126,783	-26,947
4900	38.625	275.326	170,552	129,811	-28,152
5000	38.699	276.107	174,418	132,846	-29,350

H_2O: μ = 18.016 g/mol; *h formation* h_f^o = – 241,826 kJ/kmol
$\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy
$\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation

T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	-238,921
100	33.299	152.388	3,289	2,458	-236,584
200	33.349	175.485	6,622	4,959	-232,766
298.15	33.59	188.834	9,904	7,425	-228,582
300	33.596	189.042	9,966	7,472	-228,500
400	34.262	198.788	13,356	10,030	-223,901
500	35.226	206.534	16,829	12,672	-219,051
600	36.325	213.052	20,405	15,416	-214,007
700	37.495	218.739	24,096	18,276	-208,812
800	38.721	223.825	27,906	21,254	-203,496
900	39.987	228.459	31,842	24,359	-198,083
1000	41.268	232.738	35,904	27,590	-192,590
1100	42.536	236.731	40,095	30,949	-187,033
1200	43.768	240.485	44,410	34,433	-181,425
1300	44.945	244.035	48,846	38,037	-175,774
1400	46.054	247.407	53,397	41,757	-170,089
1500	47.09	250.62	58,055	45,583	-164,376
1600	48.05	253.69	62,812	49,509	-158,639
1700	48.935	256.63	67,662	53,527	-152,883
1800	49.749	259.451	72,597	57,631	-147,111
1900	50.496	262.161	77,610	61,812	-141,325
2000	51.18	264.769	82,694	66,065	-135,528
2100	51.823	267.282	87,845	70,385	-129,721
2200	52.408	269.706	93,057	74,765	-123,905
2300	52.947	272.048	98,325	79,202	-118,082
2400	53.444	274.312	103,645	83,690	-112,252
2500	53.904	276.503	109,012	88,226	-106,416
2600	54.329	278.625	114,424	92,806	-100,575
2700	54.723	280.683	119,877	97,428	-94,729
2800	55.089	282.68	125,368	102,087	-88,878
2900	55.43	284.619	130,894	106,782	-83,023
3000	55.748	286.504	136,453	111,510	-77,163
3100	56.044	288.337	142,043	116,268	-71,298
3200	56.323	290.12	147,661	121,055	-65,430
3300	56.583	291.858	153,307	125,869	-59,558
3400	56.828	293.55	158,977	130,708	-53,681
3500	57.058	295.201	164,672	135,571	-47,801
3600	57.276	296.812	170,389	140,457	-41,916
3700	57.48	298.384	176,126	145,362	-36,027
3800	57.675	299.919	181,884	150,289	-30,133
3900	57.859	301.42	187,661	155,234	-24,236
4000	58.033	302.887	193,456	160,198	-18,334
4100	58.199	304.322	199,267	165,178	-12,427
4200	58.357	305.726	205,095	170,174	-6,516
4300	58.507	307.101	210,938	175,186	-600
4400	58.65	308.448	216,796	180,212	5,320
4500	58.787	309.767	222,668	185,253	11,245
4600	58.918	311.061	228,554	190,307	17,175
4700	59.044	312.329	234,452	195,374	23,111
4800	59.164	313.574	240,362	200,452	29,052
4900	59.275	314.795	246,284	205,543	34,998
5000	59.39	315.993	252,217	210,645	40,949

CO: μ = 28.01 g/mol; *h formation* h_f^o = – 110,527 kJ/kmol
$\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy
$\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation

T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	-113,805
100	29.104	165.85	2,902	2,071	-120,239
200	29.108	186.025	5,813	4,150	-128,526
298.15	29.142	197.653	8,671	6,192	-137,163
300	29.142	197.833	8,725	6,231	-137,328
400	29.342	206.238	11,647	8,321	-146,338
500	29.794	212.831	14,602	10,445	-155,414
600	30.443	218.319	17,613	12,624	-164,486
700	31.171	223.066	20,694	14,874	-173,518
800	31.899	227.277	23,848	17,196	-182,497
900	32.577	231.074	27,072	19,589	-191,416
1000	33.183	234.538	30,361	22,047	-200,275
1100	33.71	237.726	33,706	24,560	-209,075
1200	34.175	240.679	37,101	27,124	-217,819
1300	34.572	243.431	40,539	29,730	-226,509
1400	34.92	246.006	44,014	32,374	-235,149
1500	35.217	248.426	47,521	35,049	-243,740
1600	35.48	250.707	51,056	37,753	-252,284
1700	35.71	252.865	54,616	40,481	-260,784
1800	35.911	254.912	58,197	43,231	-269,242
1900	36.091	256.859	61,797	45,999	-277,658
2000	36.25	258.714	65,415	48,786	-286,034
2100	36.392	260.486	69,047	51,587	-294,372
2200	36.518	262.182	72,692	54,400	-302,672
2300	36.635	263.808	76,350	57,227	-310,936
2400	36.74	265.369	80,019	60,064	-319,165
2500	36.836	266.871	83,698	62,912	-327,358
2600	36.924	268.318	87,386	65,768	-335,517
2700	37.003	269.713	91,082	68,633	-343,643
2800	37.083	271.06	94,787	71,506	-351,736
2900	37.15	272.362	98,498	74,386	-359,797
3000	37.217	273.623	102,217	77,274	-367,826
3100	37.279	274.844	105,942	80,167	-375,824
3200	37.338	276.029	109,672	83,066	-383,792
3300	37.392	277.178	113,409	85,971	-391,730
3400	37.443	278.295	117,151	88,882	-399,638
3500	37.493	279.382	120,898	91,797	-407,517
3600	37.543	280.438	124,649	94,717	-415,366
3700	37.589	281.468	128,406	97,642	-423,188
3800	37.631	282.471	132,167	100,572	-430,981
3900	37.673	283.449	135,932	103,505	-438,746
4000	37.715	284.403	139,702	106,444	-446,485
4100	37.756	285.335	143,475	109,386	-454,196
4200	37.794	286.245	147,253	112,332	-461,881
4300	37.832	287.135	151,034	115,282	-469,539
4400	37.869	288.005	154,819	118,235	-477,171
4500	37.903	288.856	158,608	121,193	-484,778
4600	37.941	289.69	162,400	124,153	-492,359
4700	37.974	290.506	166,196	127,118	-499,915
4800	38.007	291.306	169,995	130,085	-507,446
4900	38.041	292.09	173,797	133,056	-514,951
5000	38.074	292.859	177,603	136,031	-522,433

CO_2: μ = 44.01 g/mol; *h formation* h_f^o = – 393,522 kJ/kmol
$\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy
$\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation

T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	-393,151
100	29.208	179.009	2,908	2,077	-393,683
200	32.359	199.975	5,950	4,287	-394,085
298.15	37.129	213.795	9,364	6,885	-394,389
300	37.221	214.025	9,433	6,939	-394,394
400	41.325	225.314	13,367	10,041	-394,675
500	44.627	234.901	17,669	13,512	-394,939
600	47.321	243.283	22,271	17,282	-395,182
700	49.564	250.75	27,118	21,298	-395,398
800	51.434	257.494	32,170	25,518	-395,586
900	52.999	263.645	37,394	29,911	-395,748
1000	54.308	269.299	42,761	34,447	-395,886
1100	55.409	274.528	48,248	39,102	-396,001
1200	56.342	279.39	53,837	43,860	-396,098
1300	57.137	283.932	59,512	48,703	-396,177
1400	57.802	288.191	65,260	53,620	-396,240
1500	58.379	292.199	71,069	58,597	-396,288
1600	58.886	295.983	76,933	63,630	-396,323
1700	59.317	299.566	82,844	68,709	-396,344
1800	59.701	302.968	88,795	73,829	-396,353
1900	60.049	306.205	94,783	78,985	-396,349
2000	60.35	309.293	100,803	84,174	-396,333
2100	60.622	312.244	106,852	89,392	-396,304
2200	60.865	315.07	112,926	94,634	-396,262
2300	61.086	317.781	119,024	99,901	-396,209
2400	61.287	320.385	125,143	105,188	-396,142
2500	61.471	322.89	131,281	110,495	-396,062
2600	61.647	325.305	137,437	115,819	-395,969
2700	61.802	327.634	143,610	121,161	-395,862
2800	61.952	329.885	149,797	126,516	-395,742
2900	62.095	332.061	156,000	131,888	-395,609
3000	62.229	334.169	162,216	137,273	-395,461
3100	62.347	336.211	168,445	142,670	-395,298
3200	62.462	338.192	174,685	148,079	-395,122
3300	62.573	340.116	180,937	153,499	-394,932
3400	62.681	341.986	187,200	158,931	-394,726
3500	62.785	343.804	193,473	164,372	-394,506
3600	62.884	345.574	199,757	169,825	-394,271
3700	62.98	347.299	206,050	175,286	-394,022
3800	63.074	348.979	212,353	180,758	-393,756
3900	63.166	350.619	218,665	186,238	-393,477
4000	63.254	352.219	224,986	191,728	-393,183
4100	63.341	353.782	231,315	197,226	-392,874
4200	63.426	355.31	237,654	202,733	-392,550
4300	63.509	356.803	244,001	208,249	-392,210
4400	63.588	358.264	250,355	213,771	-391,857
4500	63.667	359.694	256,718	219,303	-391,488
4600	63.745	361.094	263,089	224,842	-391,105
4700	63.823	362.466	269,467	230,389	-390,706
4800	63.893	363.81	275,853	235,943	-390,292
4900	63.968	365.128	282,246	241,505	-389,862
5000	64.046	366.422	288,647	247,075	-389,419

NO: μ = 30.005 g/mol; *h formation* h_f^o = 90,291 kJ/kmol
$\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy
$\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation

T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	89,775
100	32.302	177.031	3,119	2,288	88,944
200	30.42	198.747	6,241	4,578	87,800
298.15	29.845	210.758	9,192	6,713	86,600
300	29.841	210.943	9,247	6,753	86,577
400	29.944	219.529	12,232	8,906	85,331
500	30.486	226.263	15,251	11,094	84,079
600	31.238	231.886	18,336	13,347	82,822
700	32.028	236.761	21,499	15,679	81,564
800	32.767	241.087	24,740	18,088	80,303
900	33.422	244.985	28,050	20,567	79,041
1000	33.987	248.536	31,421	23,107	77,775
1100	34.468	251.799	34,845	25,699	76,508
1200	34.877	254.816	38,312	28,335	75,239
1300	35.226	257.621	41,818	31,009	73,969
1400	35.524	260.243	45,356	33,716	72,697
1500	35.78	262.703	48,921	36,449	71,425
1600	36.002	265.019	52,511	39,208	70,151
1700	36.195	267.208	56,121	41,986	68,878
1800	36.364	269.282	59,749	44,783	67,605
1900	36.514	271.252	63,393	47,595	66,332
2000	36.647	273.128	67,051	50,422	65,060
2100	36.767	274.919	70,722	53,262	63,788
2200	36.874	276.632	74,404	56,112	62,519
2300	36.971	278.273	78,096	58,973	61,251
2400	37.06	279.849	81,798	61,843	59,984
2500	37.141	281.363	85,508	64,722	58,720
2600	37.216	282.822	89,226	67,608	57,458
2700	37.285	284.227	92,951	70,502	56,199
2800	37.35	285.585	96,683	73,402	54,943
2900	37.41	286.896	100,421	76,309	53,689
3000	37.466	288.165	104,165	79,222	52,439
3100	37.519	289.395	107,914	82,139	51,192
3200	37.57	290.587	111,669	85,063	49,948
3300	37.617	291.744	115,428	87,990	48,708
3400	37.663	292.867	119,192	90,923	47,472
3500	37.706	293.96	122,960	93,859	46,239
3600	37.747	295.022	126,733	96,801	45,010
3700	37.787	296.057	130,510	99,746	43,784
3800	37.825	297.065	134,290	102,695	42,563
3900	37.862	298.048	138,075	105,648	41,346
4000	37.898	299.008	141,863	108,605	40,132
4100	37.933	299.944	145,654	111,565	38,922
4200	37.966	300.858	149,449	114,528	37,717
4300	37.999	301.752	153,248	117,496	36,515
4400	38.031	302.626	157,049	120,465	35,318
4500	38.062	303.481	160,854	123,439	34,124
4600	38.092	304.318	164,661	126,414	32,934
4700	38.122	305.137	168,472	129,394	31,749
4800	38.151	305.94	172,286	132,376	30,568
4900	38.18	306.727	176,102	135,361	29,391
5000	38.208	307.499	179,922	138,350	28,218

NO_2: μ = 46.004 g/mol; *h formation* h_f^o = 33,095 kJ/kmol
$\bar{h}_0$ is enthalpy [ref. T = 0 K], $\bar{u}$ is internal energy
$\bar{s}^o = \int c_P dT/T$; $\bar{g}_f^o$ is Gibbs free energy of formation

T	$\bar{c}_p$	$\bar{s}^o$	$\bar{h}_0$	$\bar{u}$	$\bar{g}_f^o$
K	kJ/kmol K	kJ/kmol K	kJ/kmol	kJ/kmol	kJ/kmol
0	0	0	0	0	35,927
100	33.276	202.563	3,325	2,494	39,963
200	34.385	225.852	6,691	5,028	45,422
298.15	36.974	240.034	10,186	7,707	51,258
300	37.029	240.262	10,254	7,760	51,371
400	40.171	251.342	14,113	10,787	57,560
500	43.206	260.638	18,285	14,128	63,867
600	45.834	268.755	22,741	17,752	70,230
700	47.986	275.988	27,436	21,616	76,616
800	49.708	282.512	32,324	25,672	83,008
900	51.076	288.449	37,365	29,882	89,397
1000	52.166	293.889	42,530	34,216	95,779
1100	53.041	298.903	47,791	38,645	102,152
1200	53.748	303.55	53,132	43,155	108,514
1300	54.326	307.876	58,537	47,728	114,867
1400	54.803	311.92	63,994	52,354	121,209
1500	55.2	315.715	69,495	57,023	127,543
1600	55.533	319.288	75,032	61,729	133,868
1700	55.815	322.663	80,600	66,465	140,186
1800	56.055	325.861	86,193	71,227	146,497
1900	56.262	328.897	91,810	76,012	152,804
2000	56.441	331.788	97,445	80,816	159,106
2100	56.596	334.545	103,097	85,637	165,404
2200	56.732	337.181	108,763	90,471	171,700
2300	56.852	339.706	114,443	95,320	177,993
2400	56.958	342.128	120,133	100,178	184,285
2500	57.052	344.455	125,834	105,048	190,577
2600	57.136	346.694	131,543	109,925	196,870
2700	57.211	348.852	137,261	114,812	203,164
2800	57.278	350.934	142,985	119,704	209,460
2900	57.339	352.945	148,716	124,604	215,757
3000	57.394	354.889	154,453	129,510	222,058
3100	57.444	356.772	160,195	134,420	228,363
3200	57.49	358.597	165,942	139,336	234,670
3300	57.531	360.366	171,693	144,255	240,981
3400	57.569	362.084	177,448	149,179	247,298
3500	57.604	363.754	183,206	154,105	253,618
3600	57.636	365.377	188,969	159,037	259,945
3700	57.666	366.957	194,734	163,970	266,276
3800	57.693	368.495	200,502	168,907	272,613
3900	57.719	369.994	206,272	173,845	278,956
4000	57.742	371.455	212,045	178,787	285,305
4100	57.764	372.881	217,821	183,732	291,659
4200	57.784	374.274	223,598	188,677	298,020
4300	57.803	375.634	229,377	193,625	304,388
4400	57.821	376.963	235,159	198,575	310,762
4500	57.837	378.262	240,942	203,527	317,142
4600	57.853	379.534	246,726	208,479	323,530
4700	57.867	380.778	252,512	213,434	329,925
4800	57.881	381.996	258,300	218,390	336,326
4900	57.894	383.19	264,088	223,347	342,736
5000	57.906	384.36	269,878	228,306	349,152

14. Heat transfer properties of air as a function of temperature

T (K)	ρ (kg/m^3)	c_p (kJ/kg-K)	$\mu \cdot 10^7$ (N-s/m^2)	$\nu \cdot 10^6$ (m^2/s)	$k \cdot 10^3$ (W/m-K)	$\alpha \cdot 10^6$ (m^2/s)	Pr
100	3.5562	1.032	71.1	2.00	9.34	2.54	0.786
150	2.3364	1.012	103.4	4.426	13.8	5.84	0.758
200	1.7458	1.007	132.5	7.590	18.1	10.3	0.737
250	1.3947	1.006	159.6	11.44	22.3	15.9	0.720
300	1.1614	1.007	184.6	15.89	26.3	22.5	0.707
350	0.9950	1.009	208.2	20.92	30.0	29.9	0.700
400	0.8711	1.014	230.1	26.41	33.8	38.3	0.690
450	0.7740	1.021	250.7	32.39	37.3	47.2	0.686
500	0.6964	1.030	270.1	38.79	40.7	56.7	0.684
550	0.6329	1.040	288.4	45.57	43.9	66.7	0.683
600	0.5804	1.051	305.8	52.69	46.9	76.9	0.685
650	0.5356	1.063	322.5	60.21	49.7	87.3	0.690
700	0.4975	1.075	338.8	68.10	52.4	98.0	0.695
750	0.4643	1.087	354.6	76.37	54.9	109	0.702
800	0.4354	1.099	369.8	84.93	57.3	120	0.709
850	0.4097	1.110	384.3	93.80	59.6	131	0.716
900	0.3868	1.121	398.1	102.9	62.0	143	0.720
950	0.3666	1.131	411.3	112.2	64.3	155	0.723
1000	0.3482	1.141	424.4	121.9	66.7	168	0.726
1100	0.3166	1.159	449.0	141.8	71.5	195	0.728
1200	0.2902	1.175	473.0	162.9	76.3	224	0.728
1300	0.2679	1.189	496.0	185.1	82	238	0.719
1400	0.2488	1.207	530	213	91	303	0.703
1500	0.2322	1.230	557	240	100	350	0.685
1600	0.2177	1.248	584	268	106	390	0.688
1700	0.2049	1.267	611	298	113	435	0.685
1800	0.1935	1.286	637	329	120	482	0.683
1900	0.1833	1.307	663	362	128	534	0.677
2000	0.1741	1.337	689	396	137	589	0.672
2100	0.1658	1.372	715	431	147	646	0.667
2200	0.1582	1.417	740	468	160	714	0.655
2300	0.1513	1.478	766	506	175	783	0.647
2400	0.1448	1.558	792	547	196	869	0.630
2500	0.1389	1.665	818	589	222	960	0.613
3000	0.1135	2.726	955	841	486	1,570	0.536

Logarithm to the base 10 of equilibrium constants *K*

Temp. K	$\log_{10} K$								Temp. °R
	$H_2 \leftrightharpoons 2H$	$O_2 \leftrightharpoons 2O$	$N_2 \leftrightharpoons 2N$	$\frac{1}{2}O_2 + \frac{1}{2}N_2 \leftrightharpoons NO$	$H_2O \leftrightharpoons H_2 + \frac{1}{2}O_2$	$H_2O \leftrightharpoons OH + \frac{1}{2}H_2$	$CO_2 \leftrightharpoons CO + \frac{1}{2}O_2$	$CO_2 + H_2 \leftrightharpoons CO + H_2O$	
298	−71.224	−81.208	−159.600	−15.171	−40.048	−46.054	−45.066	−5.018	537
500	−40.316	−45.880	−92.672	−8.783	−22.886	−26.130	−25.025	−2.139	900
1000	−17.292	−19.614	−43.056	−4.062	−10.062	−11.280	−10.221	−0.159	1800
1200	−13.414	−15.208	−34.754	−3.275	−7.899	−8.811	−7.764	+0.135	2160
1400	−10.630	−12.054	−28.812	−2.712	−6.347	−7.021	−6.014	+0.333	2520
1600	−8.532	−9.684	−24.350	−2.290	−5.180	−5.677	−4.706	+0.474	2880
1700	−7.666	−8.706	−22.512	−2.116	−4.699	−5.124	−4.169	+0.530	3060
1800	−6.896	−7.836	−20.874	−1.962	−4.270	−4.613	−3.693	+0.577	3240
1900	−6.204	−7.058	−19.410	−1.823	−3.886	−4.190	−3.267	+0.619	3420
2000	−5.580	−6.356	−18.092	−1.699	−3.540	−3.776	−2.884	+0.656	3600
2100	−5.016	−5.720	−16.898	−1.586	−3.227	−3.434	−2.539	+0.688	3780
2200	−4.502	−5.142	−15.810	−1.484	−2.942	−3.091	−2.226	+0.716	3960
2300	−4.032	−4.614	−14.818	−1.391	−2.682	−2.809	−1.940	+0.742	4140
2400	−3.600	−4.130	−13.908	−1.305	−2.443	−2.520	−1.679	+0.764	4320
2500	−3.202	−3.684	−13.070	−1.227	−2.224	−2.270	−1.440	+0.784	4500
2600	−2.836	−3.272	−12.298	−1.154	−2.021	−2.038	−1.219	+0.802	4680
2700	−2.494	−2.892	−11.580	−1.087	−1.833	−1.823	−1.015	+0.818	4860
2800	−2.178	−2.536	−10.914	−1.025	−1.658	−1.624	−0.825	+0.833	5040
2900	−1.882	−2.206	−10.294	−0.967	−1.495	−1.438	−0.649	+0.846	5220
3000	−1.606	−1.898	−9.716	−0.913	−1.343	−1.265	−0.485	+0.858	5400
3100	−1.348	−1.610	−9.174	−0.863	−1.201	−1.103	−0.332	+0.869	5580
3200	−1.106	−1.340	−8.664	−0.815	−1.067	−0.951	−0.189	+0.878	5760
3300	−0.878	−1.086	−8.186	−0.771	−0.942	−0.809	−0.054	+0.888	5940
3400	−0.664	−0.846	−7.736	−0.729	−0.824	−0.674	+0.071	+0.895	6120
3500	−0.462	−0.620	−7.312	−0.690	−0.712	−0.547	+0.190	+0.902	6300

Source: Based on data from the JANAF Thermochemical Tables, NSRDS-NBS-37, 1971.

Selected properties of hydrocarbon fuels: enthalpy of formation, Gibbs function of formation, entropy of gas at standard conditions, and higher and lower heating values all at 298.15 K and 1 atm; boiling points and latent heat of vaporization at 1 atm; constant–pressure adiabatic flame temperature at 1 atm; liquid density.

Formula	Fuel	MW (kg/kmol)	$\bar{h}_f^o$ (kJ/kmol)	$\bar{g}_f^o$ (kJ/kmol)	$\bar{s}^o$ (kJ/kmol.K)	HHV (kJ/kg)	LHV (kJ/kg)	T_{boil} (°C)	h_{fg} (kJ/kg)	T_{ad} (K)	ρ_{liq} (kg/m^3)
CH_4	Methane	16.04	-74,600	-50,794	186.25	55,497.72	50,011.97	-162.15	509.26	2,226	300
C_2H_2	Acetylene	26.04	227,400	209,200	200.93	49,923	48,233.01	-84.15	641.37	2,539	—
C_2H_4	Ethene	28.05	52,400	68,124	219.32	50,302.99	47,165.89	-104.15	482.78	2,369	—
C_2H_6	Ethane	30.07	-84,000	-32,886	229.49	51,903.95	47,513.65	-88.55	488.98	2,259	370
C_3H_6	Propene	42.08	20,410	62,718	266.94	48,902.09	45,764.92	-47.55	437.74	2,334	514
C_3H_8	Propane	44.10	-104,700	-23,489	269.91	50,326.56	46,334.91	-42.05	425.75	2,267	500
C_4H_8	1-Butene	56.11	-630	72,036	307.44	48,421.77	45,284.62	-6.35	389.72	2,322	595
C_4H_{10}	n-Butane	58.12	-125,600	-15,707	310.03	49,507.08	45,721.66	-0.45	385.2	2,270	579
C_5H_{10}	1-Pentene	70.13	-22,000	78,605	347.61	48,152	45,014.86	30.85	359.31	2,314	641
C_5H_{12}	n-Pentane	72.15	-146,800	-8,201	347.82	49,000.69	45,341.32	36.05	357.45	2,272	626
C_6H_6	Benzene	78.11	82,900	129,658	269.2	42,277	40,586.99	80.15	393.28	2,342	879
C_6H_{12}	1-Hexene	84.16	-42,000	87,027	385.97	47,955	44,817.87	63.85	361.21	2,308	673
C_6H_{14}	n-Hexane	86.18	-167,100	209	388.82	48,696	45,121.64	68.75	334.78	2,273	659
C_7H_{14}	1-Heptene	98.19	-63,000	95,563	424.38	47,817	44,679.88	93.85	363.59	2,305	—
C_7H_{16}	n-Heptane	100.20	-187,800	8,745	425.26	48,456	44,942.81	98.35	317.06	2,274	684
C_8H_{16}	1-Octene	112.21	-82,930	104,140	462.79	47,712	44,574.85	121.85	303.62	2,302	—
C_8H_{18}	n-Octane	114.23	-208,700	17,322	467.06	48,275	44,807.99	125.55	301.23	2,275	703
C_9H_{18}	1-Nonene	126.24	-103,512	112,717	501.24	47,631	44,493.86	145.85	277.25	2,300	—
C_9H_{20}	n-Nonane	128.26	-228,300	25,857	506.5	48,134	44,703.08	150.65	287.78	2,276	718
$C_{10}H_{20}$	1-Decene	140.27	-124,600	121,294	539.65	47,565	44,427.86	166.85	263.78	2,298	—
$C_{10}H_{22}$	n-Decane	142.28	-249,700	34,434	545.8	48,020	44,618.04	174.05	272.34	2,277	730
$C_{11}H_{22}$	1-Undecene	154.30	-144,766	129,830	578.06	47,512	44,374.87	192.85	285.17	2,296	—
$C_{11}H_{24}$	n-Undecane	156.31	-270,300	43,012	583.58	47,926	44,547.81	194.85	281.49	2,277	740
$C_{12}H_{24}$	1-Dodecene	168.32	-165,400	138,407	616.47	47,468	44,330.87	213.05	261.4	2,295	—
$C_{12}H_{26}$	n-Dodecane	170.34	-290,900	—	622.5	47,841	44,482.65	215.85	258.31	2,277	749

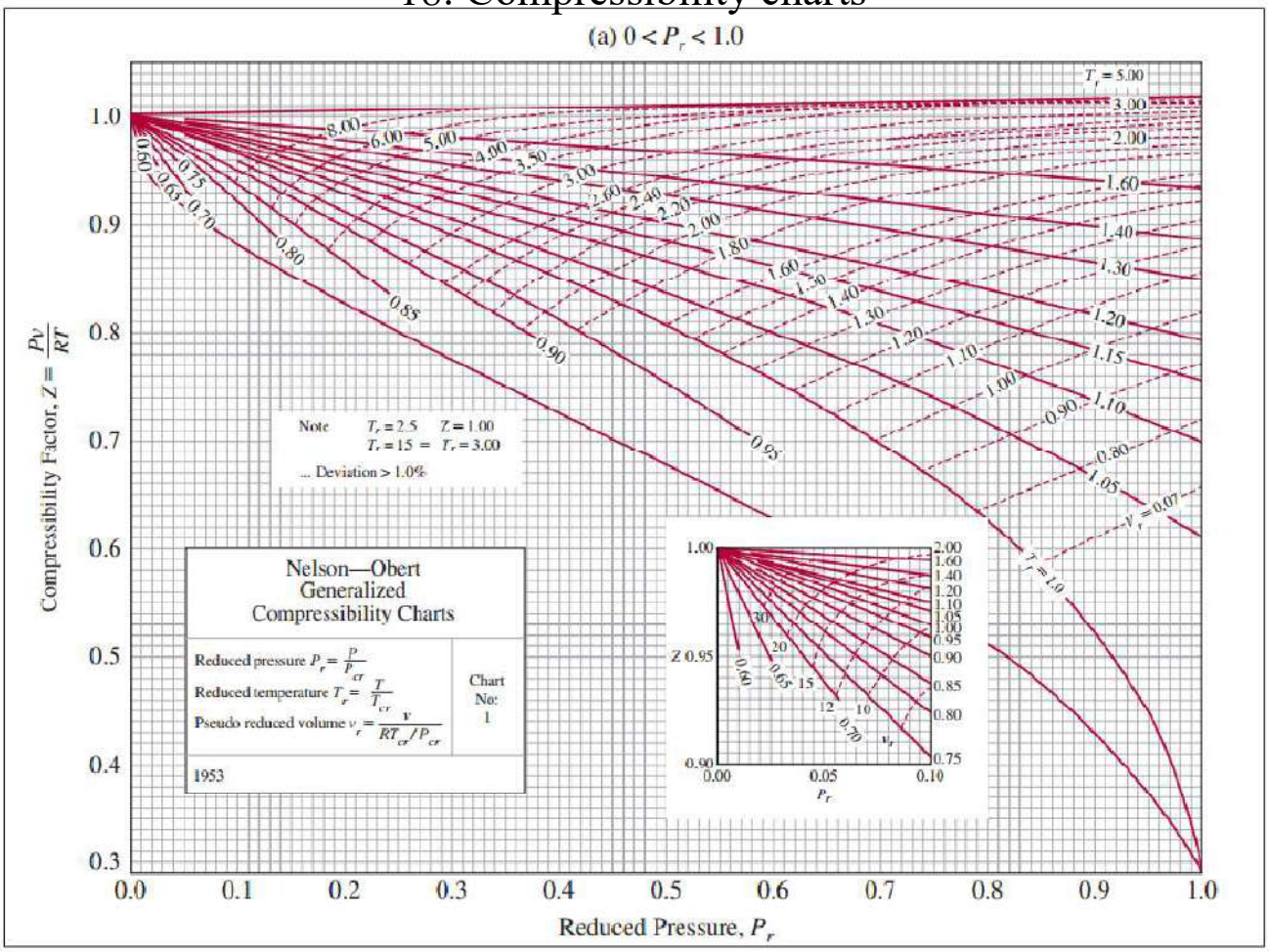
Binary diffusion coefficients (D_{AB}), the binary collision diameter (σ_{AB}), and characteristic energy appearing in the Lennard–Jones potential for the binary pair (ε_{AB}) divided by Boltzmann constant (K) at 1 atm

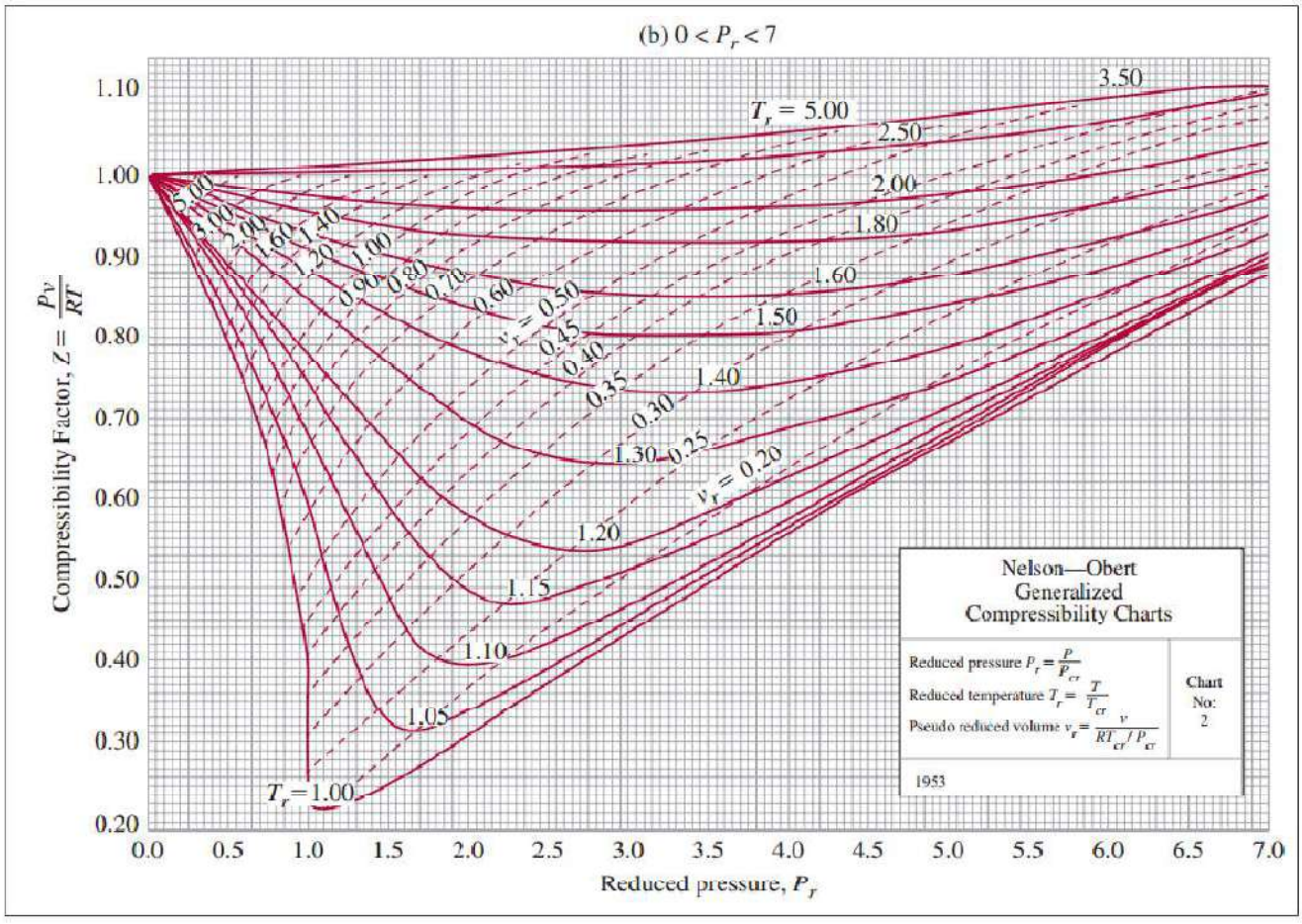
Substance A	**Substance B**	T **(K)**	D_{AB} **(cm^2/s)**	σ_{AB} **(A^o)**	ε_{AB}/K **(K)**
Benzene	Air	273	0.0722	4.53	193.75
Carbon dioxide	Air	273	0.1290	3.8065	135.757
Carbon dioxide	Nitrogen	293	0.1457	3.8315	137.703
Carbon monoxide	Air	273	0.1972	3.6035	103.296
Carbon monoxide	Nitrogen	293	0.1953	0.1953	0.1953
Cyclohexane	Air	310	0.0734	4.905	176.741
n-Hexane	Air	273	0.0615	4.9405	182.137
n-Hexane	Nitrogen	288	0.0679	4.9655	184.747
Hydrogen	Air	273	0.6641	3.266	60.7124
Hydrogen	Nitrogen	293	0.7369	3.291	61.5825
Methane	Air	273	0.1858	3.6985	118.596
Ethane	Air	273	0.1225	4.0025	150.013
Propane	Air	273	0.0956	4.2755	162.73
Isobutane	Air	273	0.0807	4.505	169.16
n-butane	Air	273	0.0766	4.6105	171.721
Isopentane	Air	273	0.0698	0.0698	0.0698
n-pentane	Air	273	0.0693	4.7335	177.826
n-Hexane	Air	273	0.0615	4.9405	182.137
n-Heptane	Air	273	0.0555	5.14	184.781
n-Octane	Air	273	0.0507	5.326	187.128
n-Octane	Nitrogen	303	0.0617	5.351	189.81
n-Nonane	Air	273	0.0466	5.54	184.518
Water	Air	273	0.1761	3.129	280.148
Water	Nitrogen	303	0.1927	3.154	284.162

The pressure and temperature dependence of the binary diffusion coefficient can be estimated using: $D_{AB}\alpha T^{3/2}/p$, assuming ideal gas behavior

https://demonstrations.wolfram.com/BinaryDiffusionCoefficientsForGases/

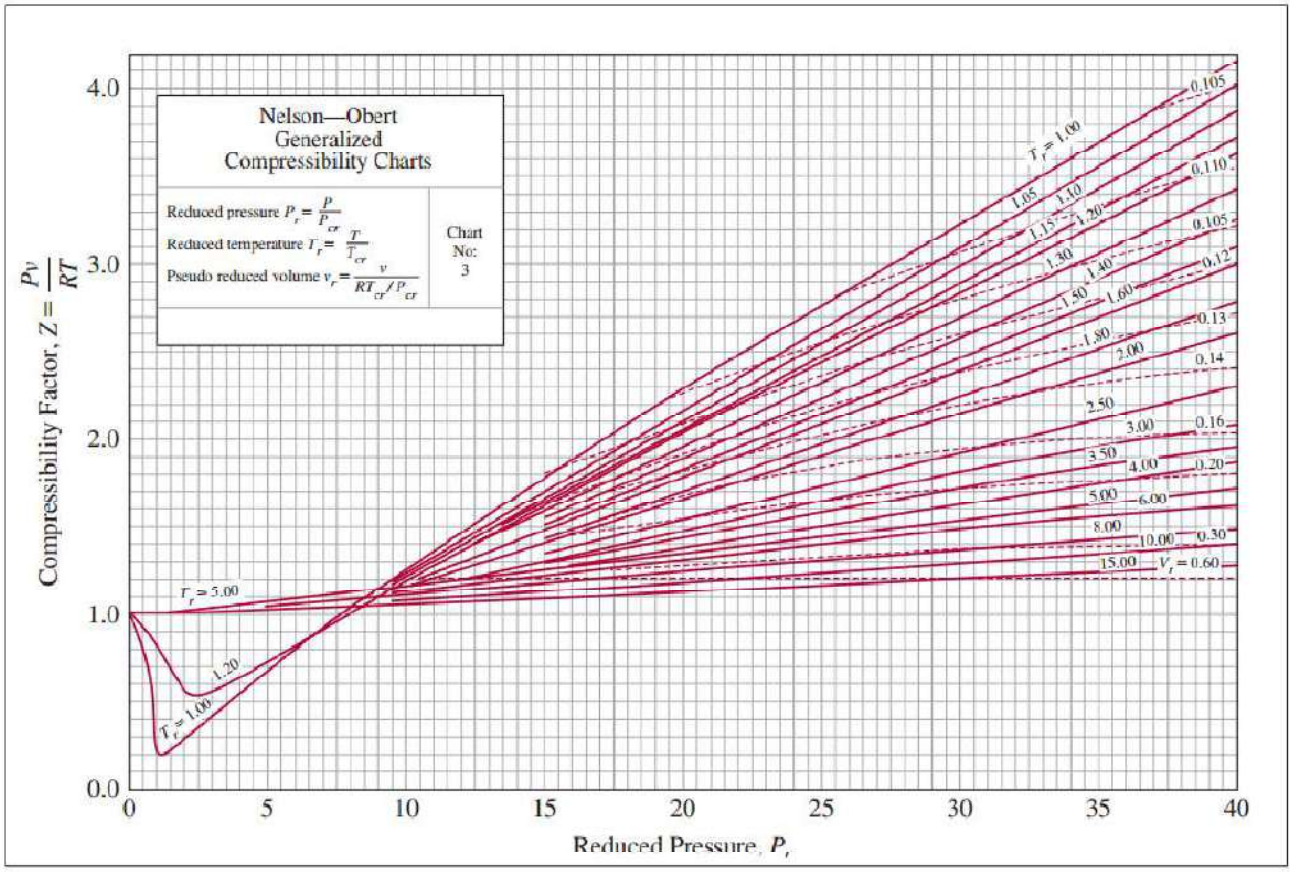
18. Compressibility charts





eon.sdsu.edu/testhome/Test/solve/basics/tables/tablesRG/zNO.html

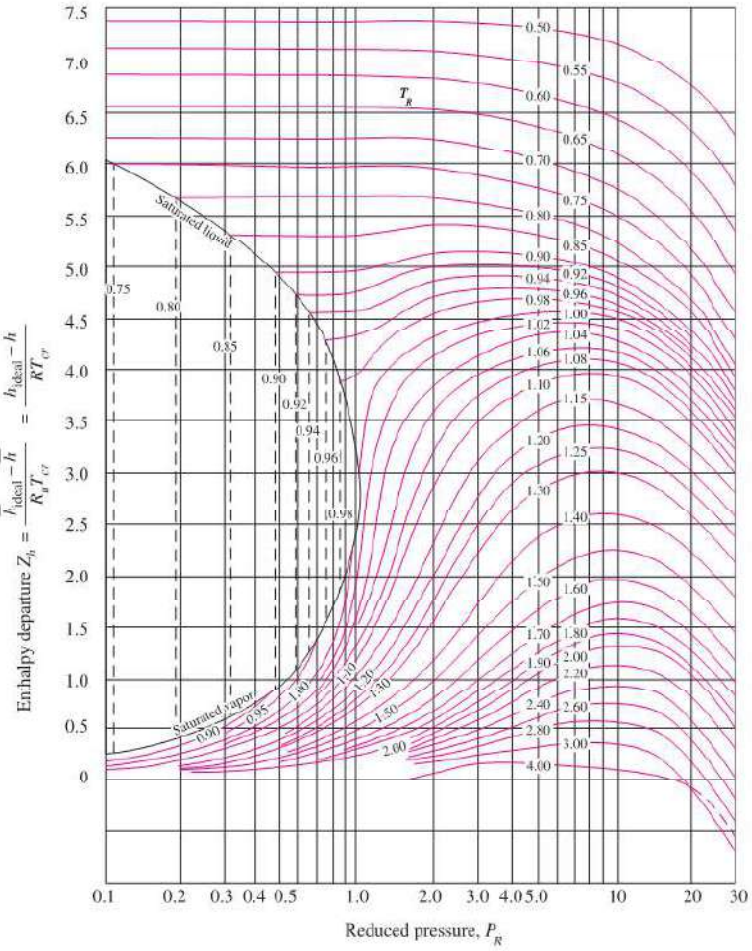
18. Compressibility charts

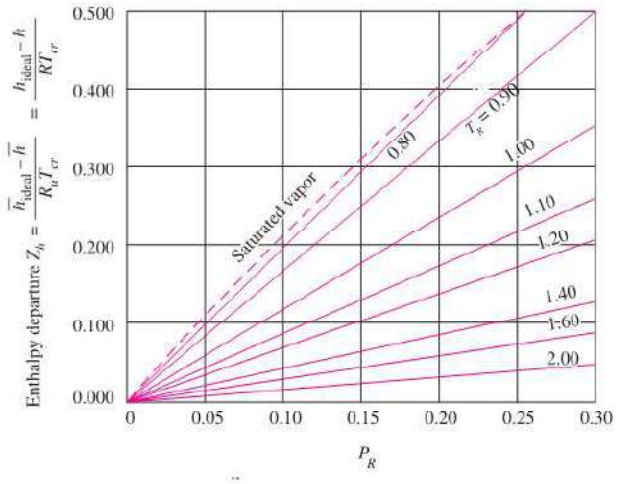


eon.sdsu.edu/testhome/Test/solve/basics/tables/tablesRG/zNO.html

18. Compressibility charts

Generalized enthalpy departure chart.





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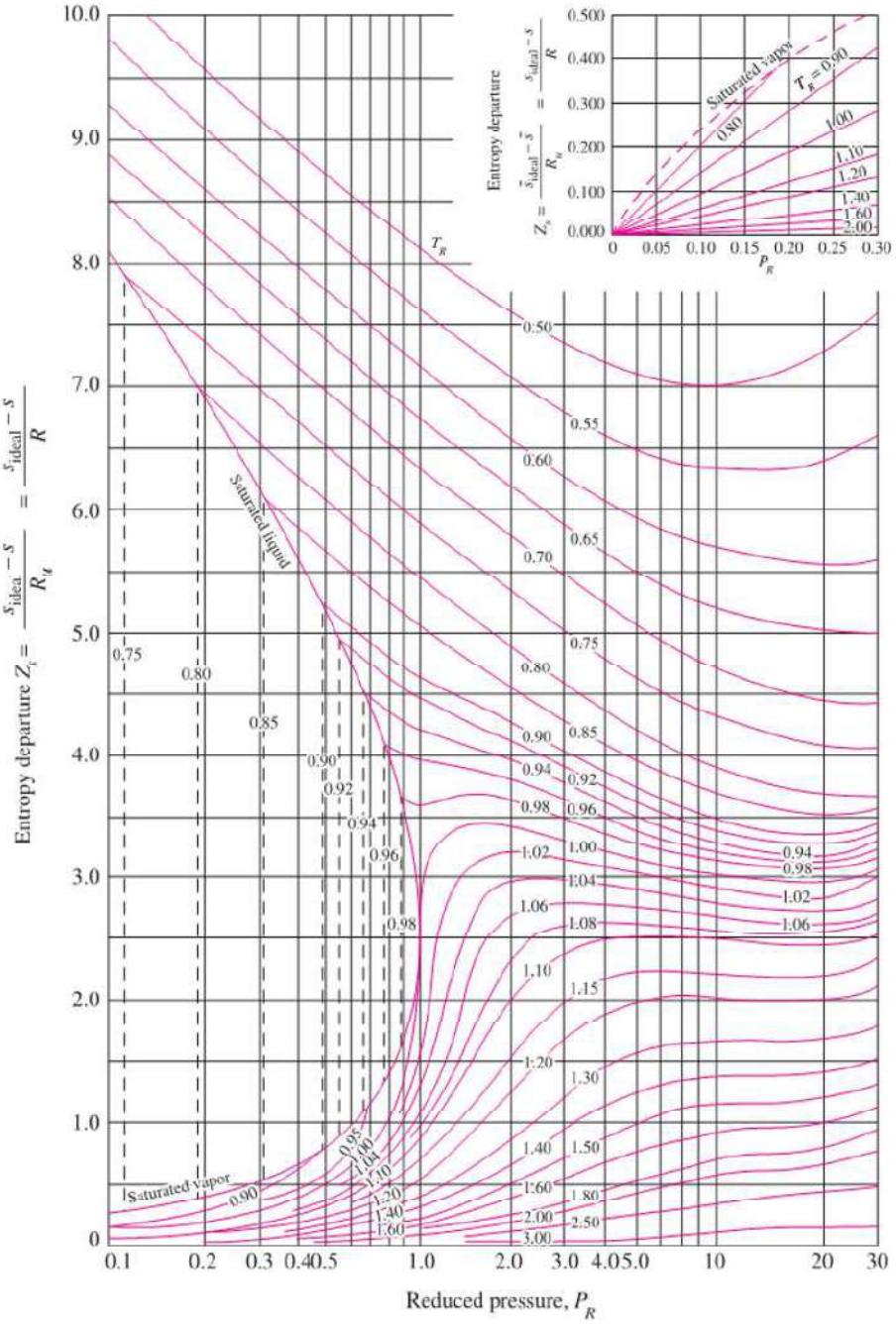
18. Compressibility charts

Generalized entropy departure chart.



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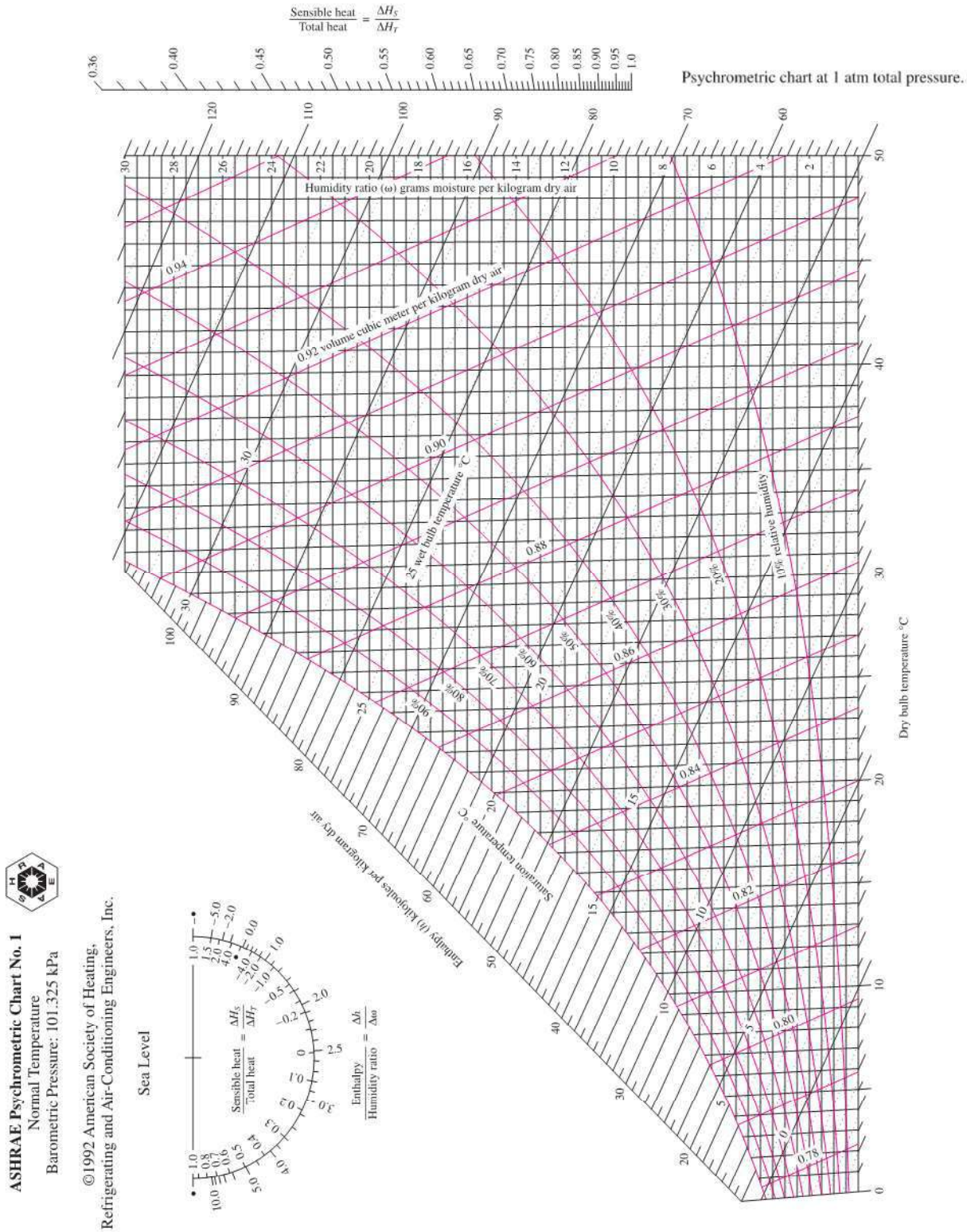
19. Psychrometric chart



Prepared by Center for Applied Thermodynamic Studies, University of Idaho.

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20 Units conversion table and some physical constants

20.1 Length, area and volume units

1 inch (in) = 0.0254 m; 1 foot (ft) = 12 in=0.3048; 1 yard (yd) = 3 ft; 1 mile (mi) = 1760 yd

1 acre = 4046.856 m^2; 1 Feddan =4200 m^2;

1 liter (ltr) = 0.001 m^3; US gallon (US gal) = 3.785 ltr; Imperial gallon (Imp. Gal) = 4.545 ltr

20.2 Mass, force and pressure units

1 pound (lb) = 0.4536 kg; 1 stone (st) = 14 lb; 1 lb = 16 ounce (oz); 1 oz = 16 dram(dr);

1 long ton = 2240 lb = 1016 kg; 1 short ton (or US ton) = 2000 lb = 907.2 kg;

1 pound force (lbf) =4.448 N ; 1 poundal =0.1383 N ;

1 bar =10^5 Pa ; 1 atm=101325 Pa; 1 pound/in2 (psi) =6894.76 Pa; 1 torr (cm_{Hg}) =133.28 Pa

20.3 Temperature conversion

T(in Kelvin K) = T(°C)+273.15; T(in Rankin R) =T(in Fahrenheit °F)+459.67;

T(°C)=[T(°F)-32]x5/9; T (K) = [T(°F)+459.67]/1.8

20.4 Energy and power units

1 BTU =1055 J; 1 erg =1x10^{-7} J;

1 Ton refrigeration =3516.85 W; 1 horsepower (hp) = 745.7 W;

20.5 Physical constants

Boltzmann constant $k_B = 1.38\times10^{-23}$ J/K; Avogadro's number $N_A = 6.022\times10^{26}$ atoms/kmol;