Steam property tables

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The following tables quantify the thermodynamic state of pure water across a large range of properties, as calculated according to the NIST-IAPWS 1995 model [1].

	Property	SI unit	unit in this document
h	mass-specific enthalpy; $h \equiv u + pv$	$\mathrm{J\,kg^{-1}}$	$1\,\mathrm{kJ\,kg^{-1}} \equiv 1 \times 10^3\,\mathrm{J\,kg^{-1}}$
p	pressure	Pa	$1\,\mathrm{MPa} \equiv 1 \times 10^6\,\mathrm{Pa} = 0.1\,\mathrm{bar}$
s	mass-specific entropy	$\mathrm{J\,K^{-1}\,kg^{-1}}$	$1\,\mathrm{kJ\,K^{-1}\,kg^{-1}} \equiv 1 \times 10^3\,\mathrm{J\,K^{-1}\,kg^{-1}}$
T	temperature	K	$T(^\circ\mathrm{C}) \equiv T(\mathrm{K}) - 273.15$
u	mass-specific internal energy	$\mathrm{J\,kg^{-1}}$	$1\,\mathrm{kJ\,kg^{-1}} \equiv 1 \times 10^3\,\mathrm{J\,kg^{-1}}$
v	mass-specific volume	$\mathrm{m^3\,kg^{-1}}$	$\mathrm{m^3\,kg^{-1}}$

Values for u and s are arbitrarily set to zero at the triple point[w] of water, so that all values for u, h and s elsewhere are expressed relative to that point. The L and V subscripts denote values corresponding to saturated liquid[w] and saturated steam[w] respectively. $T_{\mathrm{sat.}}$ is saturation temperature[w] (the temperature for which both states will be present at the given pressure). Likewise, $p_{\mathrm{sat.}}$ is saturation pressure (the pressure for which both states will be present at the given temperature). $T_{\mathrm{cr.}}$ and $p_{\mathrm{cr.}}$ correspond to critical values[w] (the maximum values for which both states can be observed).

In this document, the decimal separator is a dot [.], and the thousand separator is a comma [,], so that $1{,}234.5 \equiv 1.2345 \times 10^4$. Leading and trailing zeroes are not written. The PDF page is sized as A4 paper. Refer to freesteamtables.com to download the same data formatted differently.

 If this document is useful to you, please cite the book it is extracted from [2] in your documents: Olivier Cleynen, *Thermodynamique de l'ingénieur*. 2021, 3d ed. ISBN 9781794848207, URL https://thermodynamique.fr/.

References:

[1] W. Wagner and A. Pruß. "The IAPWS formulation 1995 for the thermodynamic properties of ordinary water substance for general and scientific use". In: *Journal of Physical and Chemical Reference Data* 31.2 (2002), pp. 387–535. DOI: 10.1063/1.1461829.

[2] O. Cleynen. *Thermodynamique de l'ingénieur*. French. 3rd ed. Olivier Cleynen / Thermodynamique.fr, 2021. ISBN: 9781794848207. URL: https://thermodynamique.fr/.

Table 1: Properties of pure water (compressed liquid and dry steam)

$\frac{m^3}{kg}$	$\frac{kJ}{kg}$	$\frac{kJ}{kg}$	$\frac{kJ}{K\,kg}$	°C	$\frac{m^3}{kg}$	$\frac{kJ}{kg}$	$\frac{kJ}{kg}$	$\frac{kJ}{K\,kg}$	°C	$\frac{m^3}{kg}$	$\frac{kJ}{kg}$	$\frac{kJ}{kg}$	$\frac{kJ}{K\,kg}$
v	u	h	s	T	v	u	h	s	T	v	u	h	s
p = 0.01 MPa ($T_{sat.}$ = 45.806 °C)					p = 0.05 MPa ($T_{sat.}$ = 81.317 °C)					p = 0.10 MPa ($T_{sat.}$ = 99.606 °C)			
0.001	42	42	0.1511	10	0.001	42	42.1	0.1511	10	0.001	42	42.1	0.1511
0.001002	83.9	83.9	0.2965	20	0.001002	83.9	84	0.2965	20	0.001002	83.9	84	0.2965
14.867	2,443.3	2,592	8.1741	50	0.001012	209.3	209.4	0.7038	50	0.001012	209.3	209.4	0.7038
17.196	2,515.5	2,687.5	8.4489	100	3.4187	2,511.5	2,682.4	7.6953	100	1.6959	2,506.2	2,675.8	7.361
21.826	2,661.3	2,879.6	8.9049	200	4.3562	2,660	2,877.8	8.1592	200	2.1724	2,658.3	2,875.5	7.8356
26.446	2,812.2	3,076.7	9.2827	300	5.284	2,811.6	3,075.8	8.5386	300	2.6388	2,810.6	3,074.5	8.2172
35.68	3,132.9	3,489.7	9.8998	500	7.1338	3,132.6	3,489.3	9.1566	500	3.5655	3,132.2	3,488.7	8.8361
40.296	3,303.3	3,706.3	10.163	600	8.0576	3,303.1	3,706	9.4201	600	4.0279	3,302.8	3,705.6	9.0998
44.911	3,480.8	3,929.9	10.406	700	8.9812	3,480.6	3,929.7	9.6625	700	4.49	3,480.4	3,929.4	9.3424
49.527	3,665.3	4,160.6	10.631	800	9.9047	3,665.2	4,160.4	9.8882	800	4.9519	3,665	4,160.2	9.5681
54.142	3,856.9	4,398.3	10.843	900	10.828	3,856.8	4,398.2	10.1	900	5.4137	3,856.6	4,398	9.78
58.758	4,055.2	4,642.8	11.043	1,000	11.751	4,055.2	4,642.7	10.3	1,000	5.8754	4,055.1	4,642.6	9.98
63.373	4,260	4,893.7	11.233	1,100	12.674	4,260	4,893.7	10.49	1,100	6.3371	4,259.8	4,893.5	10.17
67.988	4,470.8	5,150.7	11.413	1,200	13.598	4,470.8	5,150.7	10.67	1,200	6.7988	4,470.7	5,150.6	10.35
81.834	5,135.7	5,954	11.909	1,500	16.367	5,135.6	5,953.9	11.166	1,500	8.1836	5,135.5	5,953.9	10.846
104,91	6,327.9	7,377	12.615	2,000	20.982	6,327.9	7,377	11.872	2,000	10.491	6,327.9	7,377	11.552
p = 0.20 MPa ($T_{sat.}$ = 120.210 °C)					p = 0.40 MPa ($T_{sat.}$ = 143.608 °C)					p = 0.60 MPa ($T_{sat.}$ = 158.826 °C)			
0.001	42	42.2	0.1511	10	0.001	42	42.4	0.1511	10	0.001	42	42.6	0.151
0.001002	83.9	84.1	0.2964	20	0.001002	83.9	84.3	0.2964	20	0.001002	83.9	84.5	0.2964
0.001012	209.3	209.5	0.7037	50	0.001012	209.3	209.7	0.7036	50	0.001012	209.2	209.9	0.7035
0.001043	419	419.2	1.3071	100	0.001043	419	419.4	1.307	100	0.001043	418.9	419.5	1.3068
1.0805	2,654.6	2,870.7	7.5081	200	0.53433	2,647.2	2,860.9	7.1723	200	0.35212	2,639.3	2,850.6	6.9683
1.3162	2,808.9	3,072.1	7.8941	300	0.65489	2,805.1	3,067.1	7.5677	300	0.43442	2,801.3	3,062	7.374
1.7814	3,131.4	3,487.7	8.5152	500	0.88936	3,129.8	3,485.5	8.1933	500	0.592	3,128.2	3,483.4	8.0041
2.013	3,302.2	3,704.8	8.7792	600	1.0056	3,301	3,703.2	8.458	600	0.66976	3,299.8	3,701.7	8.2695
2.2443	3,479.9	3,928.8	9.022	700	1.1215	3,479	3,927.6	8.7012	700	0.74725	3,478.1	3,926.4	8.5131
2.4755	3,664.7	4,159.8	9.2479	800	1.2373	3,663.9	4,158.8	8.9273	800	0.82457	3,663.2	4,157.9	8.7395
2.7066	3,856.3	4,397.6	9.4598	900	1.353	3,855.7	4,396.9	9.1394	900	0.90178	3,855.1	4,396.2	8.9518
2.9375	4,054.8	4,642.3	9.6599	1,000	1.4686	4,054.3	4,641.7	9.3396	1,000	0.97893	4,053.7	4,641.1	9.1521
3.1685	4,259.6	4,893.3	9.8497	1,100	1.5841	4,259.2	4,892.8	9.5295	1,100	1.056	4,258.8	4,892.4	9.342
3.3994	4,470.5	5,150.4	10.03	1,200	1.6997	4,470.1	5,150	9.7102	1,200	1.1331	4,469.7	5,149.6	9.5228
4.0919	5,135.4	5,953.8	10.526	1,500	2.0461	5,135.2	5,953.6	10.206	1,500	1.3641	5,134.9	5,953.4	10.019
5.246	6,327.7	7,376.9	11.232	2,000	2.6232	6,327.6	7,376.9	10.912	2,000	1.749	6,327.4	7,376.8	10.725
p = 0.80 MPa ($T_{sat.}$ = 170.406 °C)					p = 1.0 MPa ($T_{sat.}$ = 179.878 °C)					p = 1.2 MPa ($T_{sat.}$ = 187.957 °C)			
0.001	42	42.8	0.151	10	0.001	42	43	0.151	10	0.001	42	43.2	0.151
0.001001	83.9	84.7	0.2963	20	0.001001	83.8	84.9	0.2963	20	0.001001	83.8	85	0.2962
0.001012	209.2	210	0.7034	50	0.001012	209.2	210.2	0.7034	50	0.001012	209.2	210.4	0.7033
0.001043	418.9	419.7	1.3067	100	0.001043	418.8	419.8	1.3065	100	0.001043	418.7	420	1.3064
0.26088	2,631	2,839.7	6.8176	200	0.20602	2,622.3	2,828.3	6.6955	200	0.16934	2,612.9	2,816.1	6.5909
0.32416	2,797.6	3,056.9	7.2345	300	0.25799	2,793.6	3,051.6	7.1246	300	0.21386	2,789.7	3,046.3	7.0335
0.44332	3,126.6	3,481.3	7.8692	500	0.35411	3,125	3,479.1	7.7641	500	0.29464	3,123.3	3,476.9	7.6779
0.50185	3,298.6	3,700.1	8.1354	600	0.40111	3,297.5	3,698.6	8.031	600	0.33394	3,296.3	3,697	7.9455
0.56011	3,477.2	3,925.3	8.3794	700	0.44783	3,476.3	3,924.1	8.2755	700	0.37297	3,475.3	3,922.9	8.1904
0.6182	3,662.4	4,157	8.6061	800	0.49438	3,661.7	4,156.1	8.5024	800	0.41184	3,661	4,155.2	8.4176
0.67619	3,854.5	4,395.5	8.8185	900	0.54083	3,854	4,394.8	8.715	900	0.45059	3,853.3	4,394	8.6303
0.73411	4,053.2	4,640.5	9.0189	1,000	0.58721	4,052.7	4,639.9	8.9155	1,000	0.48928	4,052.3	4,639.4	8.831
0.79197	4,258.3	4,891.9	9.2089	1,100	0.63354	4,257.9	4,891.4	9.1056	1,100	0.52792	4,257.5	4,891	9.0212
0.8498	4,469.4	5,149.2	9.3898	1,200	0.67983	4,469.1	5,148.9	9.2866	1,200	0.56652	4,468.7	5,148.5	9.2022
1.0232	5,134.6	5,953.2	9.8861	1,500	0.81857	5,134.4	5,953	9.783	1,500	0.68218	5,134.2	5,952.8	9.6987
1.3118	6,327.4	7,376.8	10.592	2,000	1.0496	6,327.2	7,376.8	10.489	2,000	0.87471	6,327	7,376.7	10.405

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Table 1 (continued)

v	u	h	s	T	v	u	h	s	T	v	u	h	s
p = 1.4 MPa ($T_{\text{sat.}}$ = 195.039 °C)					p = 1.6 MPa ($T_{\text{sat.}}$ = 201.370 °C)					p = 1.8 MPa ($T_{\text{sat.}}$ = 207.112 °C)			
0.001	42	43.4	0.151	10	0.001	42	43.6	0.1509	10	0.000999	42	43.8	0.1509
0.001001	83.8	85.2	0.2962	20	0.001001	83.8	85.4	0.2962	20	0.001001	83.8	85.6	0.2961
0.001012	209.1	210.5	0.7032	50	0.001011	209.1	210.7	0.7031	50	0.001011	209.1	210.9	0.703
0.001043	418.7	420.1	1.3062	100	0.001043	418.6	420.3	1.306	100	0.001043	418.6	420.4	1.3059
0.14303	2,602.8	2,803	6.4975	200	0.001156	850.4	852.3	2.3305	200	0.001156	850.3	852.4	2.3301
0.18232	2,785.7	3,040.9	6.9552	300	0.15866	2,781.5	3,035.4	6.8863	300	0.14025	2,777.5	3,029.9	6.8246
0.25216	3,121.8	3,474.8	7.6047	500	0.22029	3,120.1	3,472.6	7.5409	500	0.19551	3,118.5	3,470.4	7.4845
0.28597	3,295	3,695.4	7.873	600	0.24999	3,293.9	3,693.9	7.81	600	0.222	3,292.7	3,692.3	7.7543
0.31951	3,474.4	3,921.7	8.1183	700	0.2794	3,473.5	3,920.5	8.0557	700	0.24821	3,472.6	3,919.4	8.0004
0.35287	3,660.3	4,154.3	8.3457	800	0.30865	3,659.5	4,153.3	8.2834	800	0.27426	3,658.7	4,152.4	8.2284
0.38614	3,852.7	4,393.3	8.5587	900	0.3378	3,852.1	4,392.6	8.4965	900	0.3002	3,851.5	4,391.9	8.4416
0.41933	4,051.7	4,638.8	8.7594	1,000	0.36687	4,051.2	4,638.2	8.6974	1,000	0.32606	4,050.7	4,637.6	8.6426
0.45247	4,257	4,890.5	8.9497	1,100	0.39589	4,256.6	4,890	8.8878	1,100	0.35188	4,256.1	4,889.5	8.8331
0.48558	4,468.3	5,148.1	9.1308	1,200	0.42487	4,467.9	5,147.7	9.0689	1,200	0.37766	4,467.5	5,147.3	9.0143
0.58476	5,133.9	5,952.6	9.6274	1,500	0.51169	5,133.7	5,952.4	9.5656	1,500	0.45486	5,133.4	5,952.1	9.5111
0.74982	6,327	7,376.7	10.334	2,000	0.65615	6,326.8	7,376.6	10.272	2,000	0.5833	6,326.7	7,376.6	10.218
p = 2.0 MPa ($T_{\text{sat.}}$ = 212.377 °C)					p = 2.5 MPa ($T_{\text{sat.}}$ = 223.950 °C)					p = 3.0 MPa ($T_{\text{sat.}}$ = 233.853 °C)			
0.000999	42	44	0.1509	10	0.000999	42	44.5	0.1509	10	0.000999	41.9	44.9	0.1508
0.001001	83.8	85.8	0.2961	20	0.001001	83.8	86.3	0.296	20	0.001	83.7	86.7	0.2959
0.001011	209	211.1	0.7029	50	0.001011	209	211.5	0.7027	50	0.001011	208.9	211.9	0.7024
0.001042	418.5	420.6	1.3057	100	0.001042	418.4	421	1.3053	100	0.001042	418.2	421.3	1.305
0.001156	850.1	852.5	2.3298	200	0.001156	849.8	852.7	2.329	200	0.001155	849.4	852.9	2.3282
0.12551	2,773.2	3,024.2	6.7684	300	0.098937	2,762.3	3,009.6	6.6459	300	0.081179	2,750.8	2,994.3	6.5412
0.17568	3,116.8	3,468.2	7.4337	500	0.13999	3,112.7	3,462.7	7.3254	500	0.1162	3,108.6	3,457.2	7.2359
0.19961	3,291.5	3,690.7	7.7043	600	0.15931	3,288.5	3,686.8	7.5979	600	0.13245	3,285.5	3,682.8	7.5103
0.22326	3,471.7	3,918.2	7.9509	700	0.17835	3,469.3	3,915.2	7.8455	700	0.14841	3,467	3,912.2	7.759
0.24674	3,658	4,151.5	8.179	800	0.19721	3,656.2	4,149.2	8.0743	800	0.1642	3,654.3	4,146.9	7.9885
0.27012	3,850.9	4,391.1	8.3925	900	0.21597	3,849.4	4,389.3	8.2882	900	0.17988	3,847.9	4,387.5	8.2028
0.29342	4,050.2	4,637	8.5936	1,000	0.23466	4,049	4,635.6	8.4896	1,000	0.19549	4,047.6	4,634.1	8.4045
0.31667	4,255.8	4,889.1	8.7842	1,100	0.2533	4,254.7	4,887.9	8.6804	1,100	0.21105	4,253.6	4,886.7	8.5955
0.33989	4,467.2	5,147	8.9654	1,200	0.2719	4,466.3	5,146	8.8618	1,200	0.22657	4,465.3	5,145	8.777
0.4094	5,133.1	5,951.9	9.4624	1,500	0.32757	5,132.5	5,951.4	9.359	1,500	0.27301	5,131.9	5,950.9	9.2745
0.52501	6,326.5	7,376.5	10.169	2,000	0.42011	6,326.1	7,376.4	10.066	2,000	0.35017	6,325.8	7,376.3	9.9818
p = 3.5 MPa ($T_{\text{sat.}}$ = 242.557 °C)					p = 4.0 MPa ($T_{\text{sat.}}$ = 250.354 °C)					p = 4.5 MPa ($T_{\text{sat.}}$ = 257.437 °C)			
0.000999	41.9	45.4	0.1508	10	0.000998	41.9	45.9	0.1507	10	0.000998	41.9	46.4	0.1507
0.001	83.7	87.2	0.2958	20	0.001	83.7	87.7	0.2956	20	0.001	83.6	88.1	0.2955
0.001011	208.8	212.4	0.7022	50	0.00101	208.7	212.8	0.702	50	0.00101	208.7	213.2	0.7017
0.001042	418.1	421.7	1.3046	100	0.001041	417.9	422.1	1.3042	100	0.001041	417.8	422.5	1.3038
0.001155	849	853.1	2.3275	200	0.001154	848.7	853.3	2.3267	200	0.001154	848.3	853.5	2.3259
0.068453	2,738.8	2,978.4	6.4484	300	0.05887	2,726.2	2,961.7	6.3639	300	0.051378	2,713	2,944.2	6.2854
0.099195	3,104.4	3,451.6	7.1593	500	0.086442	3,100.2	3,446	7.0922	500	0.076521	3,096.1	3,440.4	7.0323
0.11325	3,282.5	3,678.9	7.4356	600	0.098859	3,279.5	3,674.9	7.3705	600	0.087662	3,276.4	3,670.9	7.3127
0.12702	3,464.7	3,909.3	7.6854	700	0.11098	3,462.4	3,906.3	7.6214	700	0.0985	3,460.1	3,903.3	7.5646
0.14061	3,652.5	4,144.6	7.9156	800	0.12292	3,650.6	4,142.3	7.8523	800	0.10916	3,648.8	4,140	7.7962
0.1541	3,846.4	4,385.7	8.1303	900	0.13476	3,844.9	4,383.9	8.0674	900	0.11972	3,843.4	4,382.1	8.0118
0.16751	4,046.4	4,632.7	8.3324	1,000	0.14652	4,045.1	4,631.2	8.2697	1,000	0.1302	4,043.9	4,629.8	8.2144
0.18087	4,252.6	4,885.6	8.5235	1,100	0.15824	4,251.4	4,884.4	8.4611	1,100	0.14064	4,250.3	4,883.2	8.406
0.1942	4,464.4	5,144.1	8.7053	1,200	0.16992	4,463.4	5,143.1	8.643	1,200	0.15103	4,462.6	5,142.2	8.588
0.23404	5,131.3	5,950.4	9.203	1,500	0.20481	5,130.7	5,949.9	9.1411	1,500	0.18208	5,130	5,949.4	9.0863
0.30021	6,325.5	7,376.2	9.9105	2,000	0.26274	6,325	7,376	9.8487	2,000	0.2336	6,324.7	7,375.9	9.7942

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Table 1 (continued)

v	u	h	s	T	v	u	h	s	T	v	u	h	s
p = 5.0 MPa ($T_{\text{sat.}}$ = 263.941 °C)					p = 5.5 MPa ($T_{\text{sat.}}$ = 269.965 °C)					p = 6.0 MPa ($T_{\text{sat.}}$ = 275.585 °C)			
0.000998	41.9	46.9	0.1506	10	0.000998	41.9	47.4	0.1506	10	0.000998	41.9	47.9	0.1505
0.001	83.6	88.6	0.2954	20	0.000999	83.6	89.1	0.2953	20	0.000999	83.5	89.5	0.2952
0.00101	208.6	213.6	0.7015	50	0.00101	208.5	214.1	0.7013	50	0.00101	208.4	214.5	0.701
0.001041	417.6	422.9	1.3034	100	0.001041	417.5	423.2	1.303	100	0.00104	417.4	423.6	1.3026
0.001153	847.9	853.7	2.3251	200	0.001153	847.6	853.9	2.3243	200	0.001152	847.2	854.1	2.3235
0.045346	2,699	2,925.7	6.211	300	0.040373	2,684.1	2,906.2	6.1397	300	0.036189	2,668.4	2,885.5	6.0703
0.068583	3,091.8	3,434.7	6.9781	500	0.062086	3,087.4	3,428.9	6.9285	500	0.056671	3,083.1	3,423.1	6.8826
0.078704	3,273.3	3,666.8	7.2605	600	0.071374	3,270.2	3,662.8	7.213	600	0.065265	3,267.1	3,658.7	7.1693
0.088518	3,457.7	3,900.3	7.5136	700	0.080351	3,455.4	3,897.3	7.4672	700	0.073545	3,453	3,894.3	7.4246
0.098158	3,646.9	4,137.7	7.7458	800	0.089152	3,645.1	4,135.4	7.7001	800	0.081648	3,643.2	4,133.1	7.6582
0.10769	3,841.8	4,380.2	7.9618	900	0.097844	3,840.3	4,378.4	7.9166	900	0.089641	3,838.8	4,376.6	7.8751
0.11715	4,042.6	4,628.3	8.1648	1,000	0.10646	4,041.4	4,626.9	8.1198	1,000	0.09756	4,040	4,625.4	8.0786
0.12655	4,249.3	4,882	8.3566	1,100	0.11503	4,248.2	4,880.9	8.3118	1,100	0.10543	4,247.1	4,879.7	8.2709
0.13592	4,461.6	5,141.2	8.5388	1,200	0.12356	4,460.7	5,140.3	8.4941	1,200	0.11326	4,459.7	5,139.3	8.4534
0.1639	5,129.4	5,948.9	9.0374	1,500	0.14902	5,128.8	5,948.4	8.993	1,500	0.13662	5,128.2	5,947.9	8.9525
0.21029	6,324.4	7,375.8	9.7454	2,000	0.19121	6,324	7,375.7	9.7012	2,000	0.17532	6,323.7	7,375.6	9.6609
p = 6.5 MPa ($T_{\text{sat.}}$ = 280.858 °C)					p = 7.0 MPa ($T_{\text{sat.}}$ = 285.829 °C)					p = 7.5 MPa ($T_{\text{sat.}}$ = 290.535 °C)			
0.000997	41.9	48.3	0.1505	10	0.000997	41.8	48.8	0.1504	10	0.000997	41.8	49.3	0.1504
0.000999	83.5	90	0.2951	20	0.000999	83.5	90.5	0.295	20	0.000998	83.5	91	0.2949
0.001009	208.4	214.9	0.7008	50	0.001009	208.3	215.4	0.7006	50	0.001009	208.2	215.8	0.7004
0.00104	417.2	424	1.3022	100	0.00104	417.1	424.4	1.3019	100	0.00104	416.9	424.7	1.3015
0.001152	846.8	854.3	2.3228	200	0.001151	846.5	854.5	2.322	200	0.001151	846.1	854.7	2.3212
0.032607	2,651.6	2,863.5	6.0019	300	0.029492	2,633.5	2,839.9	5.9337	300	0.026742	2,613.8	2,814.4	5.8646
0.052087	3,078.7	3,417.3	6.8399	500	0.048157	3,074.3	3,411.4	6.8	500	0.04475	3,069.9	3,405.5	6.7623
0.060096	3,264.1	3,654.7	7.1288	600	0.055665	3,260.9	3,650.6	7.091	600	0.051824	3,257.8	3,646.5	7.0555
0.067786	3,450.7	3,891.3	7.3853	700	0.06285	3,448.3	3,888.2	7.3486	700	0.058572	3,445.9	3,885.2	7.3144
0.075298	3,641.4	4,130.8	7.6195	800	0.069855	3,639.4	4,128.4	7.5836	800	0.065138	3,637.6	4,126.1	7.55
0.082699	3,837.3	4,374.8	7.8369	900	0.07675	3,835.8	4,373	7.8014	900	0.071593	3,834.2	4,371.1	7.7682
0.090027	4,038.8	4,624	8.0407	1,000	0.083571	4,037.5	4,622.5	8.0055	1,000	0.077975	4,036.3	4,621.1	7.9726
0.097305	4,246	4,878.5	8.2331	1,100	0.090341	4,244.9	4,877.3	8.1981	1,100	0.084306	4,243.9	4,876.2	8.1655
0.10455	4,458.8	5,138.4	8.4158	1,200	0.097074	4,457.9	5,137.4	8.381	1,200	0.0906	4,457	5,136.5	8.3485
0.12613	5,127.6	5,947.4	8.9152	1,500	0.11714	5,126.9	5,946.9	8.8807	1,500	0.10934	5,126.4	5,946.4	8.8485
0.16187	6,323.2	7,375.4	9.6238	2,000	0.15034	6,322.9	7,375.3	9.5895	2,000	0.14035	6,322.6	7,375.2	9.5575
p = 8 MPa ($T_{\text{sat.}}$ = 295.008 °C)					p = 9 MPa ($T_{\text{sat.}}$ = 303.345 °C)					p = 10 MPa ($T_{\text{sat.}}$ = 310.997 °C)			
0.000997	41.8	49.8	0.1503	10	0.000996	41.8	50.8	0.1502	10	0.000996	41.8	51.7	0.1501
0.000998	83.4	91.4	0.2948	20	0.000998	83.4	92.4	0.2946	20	0.000997	83.3	93.3	0.2944
0.001009	208.2	216.2	0.7001	50	0.001008	208	217.1	0.6997	50	0.001008	207.9	217.9	0.6992
0.001039	416.8	425.1	1.3011	100	0.001039	416.5	425.9	1.3003	100	0.001038	416.2	426.6	1.2996
0.00115	845.7	854.9	2.3205	200	0.001149	845	855.4	2.3189	200	0.001148	844.3	855.8	2.3174
0.024279	2,592.3	2,786.5	5.7937	300	0.001402	1,331.9	1,344.5	3.2533	300	0.001398	1,329.3	1,343.3	3.2488
0.041767	3,065.4	3,399.5	6.7266	500	0.036793	3,056.3	3,387.4	6.6603	500	0.032811	3,047	3,375.1	6.5995
0.048463	3,254.7	3,642.4	7.0221	600	0.042861	3,248.4	3,634.1	6.9605	600	0.038378	3,242	3,625.8	6.9045
0.054828	3,443.6	3,882.2	7.2821	700	0.048589	3,438.8	3,876.1	7.2229	700	0.043597	3,434	3,870	7.1693
0.061011	3,635.7	4,123.8	7.5184	800	0.054132	3,631.9	4,119.1	7.4606	800	0.048629	3,628.2	4,114.5	7.4085
0.067082	3,832.6	4,369.3	7.7371	900	0.059562	3,829.6	4,365.7	7.6802	900	0.053547	3,826.5	4,362	7.629
0.073079	4,035	4,619.6	7.9419	1,000	0.064918	4,032.4	4,616.7	7.8855	1,000	0.05839	4,029.9	4,613.8	7.8349
0.079025	4,242.8	4,875	8.135	1,100	0.070224	4,240.7	4,872.7	8.079	1,100	0.063183	4,238.5	4,870.3	8.0288
0.084934	4,456	5,135.5	8.3181	1,200	0.075492	4,454.2	5,133.6	8.2625	1,200	0.067938	4,452.3	5,131.7	8.2126
0.10252	5,125.7	5,945.9	8.8184	1,500	0.091158	5,124.5	5,944.9	8.7633	1,500	0.082066	5,123.2	5,943.9	8.714
0.1316	6,322.3	7,375.1	9.5275	2,000	0.11703	6,321.6	7,374.9	9.4729	2,000	0.10538	6,320.8	7,374.6	9.4239

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Table 1 (continued)

v	u	h	s	T	v	u	h	s	T	v	u	h	s
p = 12 MPa ($T_{\text{sat.}}$ = 324.675 °C)					p = 14 MPa ($T_{\text{sat.}}$ = 336.666 °C)					p = 16 MPa ($T_{\text{sat.}}$ = 347.355 °C)			
0.000995	41.7	53.6	0.1499	10	0.000994	41.7	55.6	0.1496	10	0.000993	41.6	57.5	0.1494
0.000996	83.2	95.1	0.2939	20	0.000996	83.1	97	0.2935	20	0.000995	82.9	98.9	0.293
0.001007	207.6	219.7	0.6983	50	0.001006	207.3	221.4	0.6974	50	0.001005	207	223.1	0.6964
0.001038	415.7	428.1	1.298	100	0.001037	415.1	429.6	1.2965	100	0.001036	414.6	431.1	1.295
0.001146	842.9	856.7	2.3144	200	0.001144	841.5	857.6	2.3114	200	0.001143	840.2	858.4	2.3085
0.00139	1,324.5	1,341.2	3.2401	300	0.001382	1,319.9	1,339.2	3.2319	300	0.001375	1,315.4	1,337.4	3.224
0.026828	3,028.1	3,350	6.4903	500	0.022544	3,008.5	3,324.1	6.3932	500	0.019323	2,988.1	3,297.3	6.3046
0.031651	3,229.1	3,608.9	6.8054	600	0.026845	3,216	3,591.8	6.7191	600	0.023238	3,202.6	3,574.4	6.6421
0.036109	3,424.4	3,857.7	7.0753	700	0.030761	3,414.6	3,845.3	6.9941	700	0.026749	3,404.9	3,832.9	6.9224
0.040375	3,620.6	4,105.1	7.3173	800	0.034479	3,613.1	4,095.8	7.2391	800	0.030058	3,605.4	4,086.3	7.1703
0.044524	3,820.4	4,354.7	7.5396	900	0.03808	3,814.3	4,347.4	7.4632	900	0.033247	3,808	4,340	7.3964
0.048599	4,024.8	4,608	7.7467	1,000	0.041605	4,019.6	4,602.1	7.6716	1,000	0.036361	4,014.5	4,596.3	7.606
0.052622	4,234.1	4,865.6	7.9416	1,100	0.045079	4,229.8	4,860.9	7.8673	1,100	0.039422	4,225.5	4,856.3	7.8025
0.056608	4,448.6	5,127.9	8.1259	1,200	0.048516	4,445	5,124.2	8.0523	1,200	0.042447	4,441.2	5,120.4	7.9882
0.068428	5,120.8	5,941.9	8.6284	1,500	0.058687	5,118.3	5,939.9	8.5559	1,500	0.051381	5,115.8	5,937.9	8.4929
0.087892	6,319.5	7,374.2	9.3392	2,000	0.075404	6,318	7,373.7	9.2674	2,000	0.066037	6,316.6	7,373.2	9.2052
p = 18 MPa ($T_{\text{sat.}}$ = 356.992 °C)					p = 20 MPa ($T_{\text{sat.}}$ = 365.749 °C)					p = 30 MPa ($p > p_{cr.}$)			
0.000992	41.5	59.4	0.1491	10	0.000991	41.5	61.3	0.1489	10	0.000987	41.2	70.8	0.1475
0.000994	82.8	100.7	0.2925	20	0.000993	82.7	102.6	0.2921	20	0.000989	82.1	111.8	0.2897
0.001004	206.7	224.8	0.6955	50	0.001003	206.4	226.5	0.6946	50	0.000999	205.1	235.1	0.6901
0.001035	414	432.7	1.2935	100	0.001034	413.5	434.2	1.292	100	0.001029	410.9	441.7	1.2847
0.001141	838.8	859.4	2.3056	200	0.001139	837.5	860.3	2.3027	200	0.00113	831.1	865	2.2888
0.001368	1,311.2	1,335.8	3.2164	300	0.001361	1,307.2	1,334.4	3.2091	300	0.001332	1,288.9	1,328.9	3.176
0.01681	2,967.1	3,269.7	6.2223	500	0.014793	2,945.3	3,241.2	6.1446	500	0.00869	2,824	3,084.7	5.7956
0.020431	3,189	3,556.8	6.572	600	0.018185	3,175.3	3,539	6.5075	600	0.011445	3,103.4	3,446.7	6.2373
0.023629	3,395.1	3,820.4	6.8579	700	0.021133	3,385.1	3,807.8	6.799	700	0.013653	3,334.3	3,743.9	6.5598
0.026619	3,597.8	4,076.9	7.1089	800	0.023869	3,590.1	4,067.5	7.0531	800	0.015628	3,551.2	4,020	6.83
0.029489	3,801.9	4,332.7	7.3368	900	0.026483	3,795.7	4,325.4	7.2829	900	0.017473	3,764.6	4,288.8	7.0695
0.032282	4,009.4	4,590.5	7.5476	1,000	0.02902	4,004.3	4,584.7	7.495	1,000	0.01924	3,978.6	4,555.8	7.288
0.035023	4,221.2	4,851.6	7.745	1,100	0.031504	4,216.8	4,846.9	7.6933	1,100	0.020953	4,195.2	4,823.8	7.4906
0.037727	4,437.5	5,116.6	7.9313	1,200	0.033952	4,433.8	5,112.8	7.8802	1,200	0.02263	4,415.3	5,094.2	7.6807
0.045699	5,113.3	5,935.9	8.4372	1,500	0.041154	5,110.8	5,933.9	8.3871	1,500	0.027521	5,098.6	5,924.2	8.1932
0.058753	6,315.2	7,372.8	9.1502	2,000	0.052925	6,313.8	7,372.3	9.101	2,000	0.035443	6,306.8	7,370.1	8.9108
p = 40 MPa ($p > p_{cr.}$)					p = 50 MPa ($p > p_{cr.}$)					p = 100 MPa ($p > p_{cr.}$)			
0.000982	40.9	80.2	0.1458	10	0.000978	40.6	89.5	0.144	10	0.000959	38.8	134.7	0.1326
0.000985	81.5	120.9	0.2872	20	0.00098	80.9	130	0.2845	20	0.000962	78	174.2	0.2699
0.000995	203.7	243.6	0.6855	50	0.000991	202.5	252	0.681	50	0.000973	196.6	293.9	0.6587
0.001024	408.4	449.3	1.2775	100	0.00102	405.9	456.9	1.2705	100	0.001	395.1	495.1	1.2375
0.001122	825.1	870	2.2755	200	0.001115	819.4	875.2	2.2628	200	0.001083	795.1	903.4	2.2064
0.001308	1,273.3	1,325.6	3.1473	300	0.001288	1,259.6	1,324	3.1218	300	0.001215	1,207.6	1,329.1	3.0219
0.005623	2,681.6	2,906.5	5.4744	500	0.00389	2,528.1	2,722.6	5.1762	500	0.001893	2,126.9	2,316.2	4.49
0.008089	3,026.8	3,350.4	6.017	600	0.006108	2,947.1	3,252.5	5.8245	600	0.002672	2,597.9	2,865.1	5.1581
0.00993	3,281.9	3,679.1	6.374	700	0.007717	3,228.8	3,614.6	6.2178	700	0.003546	2,976.1	3,330.7	5.6639
0.011521	3,511.8	3,972.6	6.6612	800	0.009072	3,472.2	3,925.8	6.5225	800	0.004336	3,281.7	3,715.3	6.0406
0.01298	3,733.3	4,252.5	6.9106	900	0.010296	3,702	4,216.8	6.7819	900	0.005042	3,551.4	4,055.6	6.344
0.01436	3,952.9	4,527.3	7.1355	1,000	0.011441	3,927.4	4,499.4	7.0131	1,000	0.00569	3,804	4,373	6.6038
0.015686	4,173.7	4,801.1	7.3425	1,100	0.012534	4,152.2	4,778.9	7.2244	1,100	0.006296	4,048.8	4,678.4	6.8347
0.016976	4,396.9	5,075.9	7.5357	1,200	0.01359	4,378.6	5,058.1	7.4207	1,200	0.006873	4,290.3	4,977.6	7.045
0.020709	5,086.2	5,914.6	8.0536	1,500	0.016626	5,074.1	5,905.4	7.944	1,500	0.008491	5,015.3	5,864.4	7.593
0.026705	6,299.9	7,368.1	8.775	2,000	0.021464	6,293	7,366.2	8.6691	2,000	0.010998	6,259.4	7,359.2	8.3352

Table 2: Properties of pure water at its saturation points, sorted by temperature

°C	MPa	kJ kg^{-1}			kJ kg^{-1}			kJ K^{-1} kg^{-1}			m^3 kg^{-1}	
$T_{\text{sat.}}$	$p_{\text{sat.}}$	u_L	u_V	$\Delta u_{L\to V}$	h_L	h_V	$\Delta h_{L\to V}$	s_L	s_V	$\Delta s_{L\to V}$	v_L	v_V
0.01	0.000612	[0]	2,374.9	2,374.9	small	2,500.9	2,500.9	[0]	9.1555	9.1555	0.001	205.991
5	0.000873	21	2,381.8	2,360.8	21	2,510.1	2,489	0.0763	9.0248	8.9486	0.001	147.011
10	0.001228	42	2,388.6	2,346.6	42	2,519.2	2,477.2	0.1511	8.8998	8.7487	0.001	106.303
15	0.001706	63	2,395.5	2,332.5	63	2,528.3	2,465.4	0.2245	8.7803	8.5558	0.001001	77.875
20	0.002339	83.9	2,402.3	2,318.4	83.9	2,537.4	2,453.5	0.2965	8.666	8.3695	0.001002	57.757
25	0.00317	104.8	2,409.1	2,304.3	104.8	2,546.5	2,441.7	0.3672	8.5566	8.1894	0.001003	43.337
30	0.004247	125.7	2,415.9	2,290.1	125.7	2,555.5	2,429.8	0.4368	8.452	8.0152	0.001004	32.878
35	0.005629	146.6	2,422.6	2,276	146.6	2,564.5	2,417.9	0.5051	8.3517	7.8466	0.001006	25.205
40	0.007385	167.5	2,429.4	2,261.9	167.5	2,573.5	2,406	0.5724	8.2555	7.6831	0.001008	19.515
45	0.009595	188.4	2,436.1	2,247.6	188.4	2,582.4	2,394	0.6386	8.1633	7.5247	0.00101	15.252
50	0.012352	209.3	2,442.7	2,233.4	209.3	2,591.3	2,381.9	0.7038	8.0748	7.371	0.001012	12.027
55	0.015762	230.2	2,449.3	2,219.1	230.3	2,600.1	2,369.8	0.768	7.9898	7.2218	0.001015	9.5643
60	0.019946	251.2	2,455.9	2,204.7	251.2	2,608.8	2,357.7	0.8313	7.9081	7.0769	0.001017	7.6672
65	0.025042	272.1	2,462.4	2,190.3	272.1	2,617.5	2,345.4	0.8937	7.8296	6.9359	0.00102	6.1935
70	0.031201	293	2,468.9	2,175.8	293.1	2,626.1	2,333	0.9551	7.754	6.7989	0.001023	5.0395
75	0.038595	314	2,475.2	2,161.3	314	2,634.6	2,320.6	1.0158	7.6812	6.6654	0.001026	4.1289
80	0.047414	335	2,481.5	2,146.6	335	2,643	2,308	1.0756	7.6111	6.5355	0.001029	3.4052
85	0.057867	356	2,487.8	2,131.8	356	2,651.3	2,295.3	1.1346	7.5434	6.4088	0.001032	2.8258
90	0.070182	377	2,493.9	2,117	377	2,659.5	2,282.5	1.1929	7.4781	6.2853	0.001036	2.3591
95	0.084608	398	2,500	2,102	398.1	2,667.6	2,269.5	1.2504	7.4151	6.1647	0.00104	1.9806
100	0.10142	419.1	2,506	2,087	419.2	2,675.6	2,256.4	1.3072	7.3541	6.0469	0.001043	1.6718
105	0.1209	440.1	2,511.9	2,071.8	440.3	2,683.4	2,243.1	1.3633	7.2952	5.9318	0.001047	1.4184
110	0.14338	461.3	2,517.7	2,056.4	461.4	2,691.1	2,229.6	1.4188	7.2381	5.8193	0.001052	1.2093
115	0.16918	482.4	2,523.4	2,041	482.6	2,698.6	2,216	1.4737	7.1828	5.7091	0.001056	1.0358
120	0.19867	503.6	2,528.8	2,025.2	503.8	2,705.9	2,202.1	1.5279	7.1291	5.6012	0.00106	0.89121
125	0.23224	524.8	2,534.3	2,009.4	525.1	2,713.1	2,188	1.5816	7.077	5.4955	0.001065	0.77003
130	0.27028	546.1	2,539.6	1,993.5	546.4	2,720.1	2,173.7	1.6346	7.0264	5.3918	0.00107	0.668
135	0.31323	567.4	2,544.7	1,977.3	567.7	2,726.9	2,159.1	1.6872	6.9772	5.29	0.001075	0.58173
140	0.36154	588.8	2,549.6	1,960.8	589.2	2,733.4	2,144.3	1.7392	6.9293	5.1901	0.00108	0.50845
145	0.41568	610.2	2,554.4	1,944.2	610.6	2,739.8	2,129.2	1.7907	6.8826	5.0919	0.001085	0.44596
150	0.47616	631.7	2,559	1,927.4	632.2	2,745.9	2,113.7	1.8418	6.8371	4.9953	0.001091	0.39245
155	0.5435	653.2	2,563.5	1,910.3	653.8	2,751.8	2,098	1.8924	6.7926	4.9002	0.001096	0.34646
160	0.61823	674.8	2,567.7	1,893	675.5	2,757.4	2,082	1.9426	6.7491	4.8066	0.001102	0.30678
165	0.70093	696.5	2,571.8	1,875.4	697.2	2,762.8	2,065.6	1.9923	6.7066	4.7143	0.001108	0.27243
170	0.79219	718.2	2,575.7	1,857.5	719.1	2,767.9	2,048.8	2.0417	6.665	4.6233	0.001114	0.24259
175	0.8926	740	2,579.4	1,839.4	741	2,772.7	2,031.7	2.0906	6.6241	4.5335	0.001121	0.21658
180	1.0028	761.9	2,582.8	1,820.9	763.1	2,777.2	2,014.2	2.1392	6.584	4.4448	0.001127	0.19384
185	1.1235	783.9	2,586	1,802.1	785.2	2,781.4	1,996.2	2.1875	6.5447	4.3571	0.001134	0.1739
190	1.2552	806	2,589	1,783	807.4	2,785.3	1,977.9	2.2355	6.5059	4.2704	0.001141	0.15636
195	1.3988	828.2	2,591.7	1,763.5	829.8	2,788.8	1,959	2.2832	6.4678	4.1846	0.001149	0.14089
200	1.5549	850.5	2,594.2	1,743.7	852.3	2,792	1,939.7	2.3305	6.4302	4.0996	0.001157	0.12721
205	1.7243	872.9	2,596.4	1,723.5	874.9	2,794.8	1,919.9	2.3777	6.393	4.0154	0.001164	0.11508
210	1.9077	895.4	2,598.3	1,703	897.6	2,797.3	1,899.6	2.4245	6.3563	3.9318	0.001173	0.10429
215	2.1058	918	2,599.9	1,681.9	920.5	2,799.3	1,878.8	2.4712	6.32	3.8488	0.001181	0.094679
220	2.3196	940.8	2,601.2	1,660.4	943.6	2,800.9	1,857.4	2.5177	6.284	3.7663	0.00119	0.086092
225	2.5497	963.7	2,602.2	1,638.5	966.8	2,802.1	1,835.4	2.564	6.2483	3.6843	0.001199	0.078403
230	2.7971	986.8	2,602.9	1,616.1	990.2	2,802.9	1,812.7	2.6101	6.2128	3.6027	0.001209	0.071503
235	3.0625	1,010.1	2,603.2	1,593.2	1,013.8	2,803.2	1,789.4	2.6561	6.1775	3.5214	0.001219	0.065298
240	3.3469	1,033.5	2,603.2	1,569.7	1,037.6	2,803	1,765.4	2.702	6.1423	3.4403	0.001229	0.059705
245	3.6512	1,057	2,602.6	1,545.7	1,061.5	2,802.2	1,740.7	2.7478	6.1072	3.3594	0.00124	0.054654
250	3.9762	1,080.8	2,601.8	1,520.9	1,085.8	2,800.9	1,715.2	2.7935	6.0721	3.2785	0.001252	0.050083
255	4.3229	1,104.7	2,600.5	1,495.8	1,110.2	2,799.1	1,688.8	2.8392	6.0369	3.1977	0.001264	0.045938
260	4.6923	1,129	2,598.7	1,469.7	1,135	2,796.6	1,661.6	2.8849	6.0016	3.1167	0.001276	0.042173
265	5.0853	1,153.4	2,596.5	1,443	1,160	2,793.5	1,633.5	2.9307	5.9661	3.0354	0.001289	0.038746
270	5.503	1,178.1	2,593.7	1,415.5	1,185.3	2,789.7	1,604.4	2.9765	5.9304	2.9539	0.001303	0.035621

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Table 2 (continued)

$T_{\text{sat.}}$	$p_{\text{sat.}}$	u_L	u_V	$\Delta u_{L\to V}$	h_L	h_V	$\Delta h_{L\to V}$	s_L	s_V	$\Delta s_{L\to V}$	v_L	v_V
275	5.9464	1,203.1	2,590.4	1,387.3	1,210.9	2,785.2	1,574.3	3.0224	5.8944	2.872	0.001318	0.032766
280	6.4166	1,228.3	2,586.4	1,358.1	1,236.9	2,779.9	1,543	3.0685	5.8579	2.7894	0.001333	0.030153
285	6.9147	1,253.9	2,581.8	1,327.9	1,263.2	2,773.7	1,510.5	3.1147	5.8209	2.7062	0.001349	0.027756
290	7.4418	1,279.8	2,576.5	1,296.7	1,290	2,766.7	1,476.7	3.1612	5.7834	2.6222	0.001366	0.025555
295	7.9991	1,306.2	2,570.5	1,264.3	1,317.3	2,758.7	1,441.4	3.208	5.7451	2.5371	0.001385	0.023529
300	8.5879	1,332.9	2,563.6	1,230.6	1,345	2,749.6	1,404.6	3.2552	5.7059	2.4507	0.001404	0.02166
305	9.2094	1,360.2	2,555.8	1,195.7	1,373.3	2,739.4	1,366.1	3.3028	5.6657	2.3629	0.001425	0.019933
310	9.8651	1,387.9	2,547	1,159.1	1,402.2	2,727.9	1,325.7	3.351	5.6244	2.2734	0.001448	0.018335
315	10.556	1,416.3	2,537.2	1,121	1,431.8	2,715.1	1,283.2	3.3998	5.5816	2.1818	0.001472	0.016851
320	11.284	1,445.3	2,526	1,080.7	1,462.2	2,700.6	1,238.4	3.4494	5.5372	2.0878	0.001499	0.015471
325	12.051	1,475.1	2,513.4	1,038.3	1,493.5	2,684.3	1,190.8	3.5	5.4908	1.9908	0.001528	0.014183
330	12.858	1,505.8	2,499.1	993.3	1,525.9	2,666	1,140.2	3.5518	5.4422	1.8903	0.001561	0.012979
335	13.707	1,537.6	2,483	945.4	1,559.5	2,645.4	1,085.9	3.605	5.3906	1.7856	0.001597	0.011847
340	14.601	1,570.6	2,464.4	893.8	1,594.5	2,621.8	1,027.3	3.6601	5.3356	1.6755	0.001638	0.010781
345	15.541	1,605.3	2,443.1	837.8	1,631.5	2,594.9	963.4	3.7176	5.2762	1.5586	0.001685	0.009769
350	16.529	1,642.1	2,418.1	776	1,670.9	2,563.6	892.7	3.7784	5.211	1.4326	0.00174	0.008802
355	17.57	1,681.9	2,388.4	706.4	1,713.7	2,526.6	812.9	3.8439	5.138	1.2942	0.001808	0.007868
360	18.666	1,726.3	2,351.8	625.5	1,761.7	2,481.5	719.8	3.9167	5.0536	1.1369	0.001895	0.006949
365	19.821	1,777.8	2,303.7	525.9	1,817.8	2,422.9	605.2	4.0014	4.9497	0.9483	0.002017	0.006012
370	21.044	1,844.1	2,230.2	386.2	1,890.7	2,334.5	443.8	4.1112	4.8012	0.6901	0.002215	0.004954
373	21.814	1,915	2,141.6	226.6	1,969.7	2,229.8	260.1	4.2308	4.6334	0.4026	0.002508	0.004045
$T_{\text{cr.}}$	22.064	2,015.8	2,015.8	0	2,084.3	2,084.3	0	4.407	4.407	0	0.003106	0.003106

Values in brackets are arbitrary references. $T_{\text{cr.}}$ = 373.946 °C

Table 3: Properties of pure water at its saturation points, sorted by pressure

MPa	°C	kJ kg^{-1}			kJ kg^{-1}			kJ K^{-1} kg^{-1}			m^3 kg^{-1}	
$p_{\text{sat.}}$	$T_{\text{sat.}}$	u_L	u_V	$\Delta u_{L\to V}$	h_L	h_V	$\Delta h_{L\to V}$	s_L	s_V	$\Delta s_{L\to V}$	v_L	v_V
611.657 Pa	0.01	[0]			small	2,500.9	2,500.9	[0]	9.1555	9.1555	0.001	205.991
0.001	6.97	29.3	2,384.5	2,355.2	29.3	2,513.7	2,484.4	0.1059	8.9749	8.869	0.001	129.178
0.002	17.5	73.4	2,398.9	2,325.5	73.4	2,532.9	2,459.4	0.2606	8.7226	8.462	0.001001	66.987
0.003	24.05	100.9	2,407.9	2,307.1	100.9	2,544.8	2,444	0.3539	8.5773	8.2234	0.001003	45.841
0.004	28.96	121.4	2,414.5	2,293.2	121.4	2,553.7	2,432.3	0.4224	8.4734	8.051	0.001004	34.791
0.005	32.87	137.7	2,419.8	2,282	137.8	2,560.7	2,423	0.4762	8.3938	7.9176	0.001005	28.185
0.006	36.16	151.5	2,424.2	2,272.7	151.5	2,566.6	2,415.2	0.5208	8.329	7.8082	0.001006	23.733
0.007	39	163.3	2,428	2,264.7	163.4	2,571.7	2,408.4	0.559	8.2745	7.7154	0.001008	20.524
0.008	41.51	173.8	2,431.4	2,257.6	173.8	2,576.2	2,402.4	0.5925	8.2273	7.6348	0.001008	18.099
0.009	43.76	183.2	2,434.4	2,251.2	183.3	2,580.2	2,397	0.6223	8.1858	7.5635	0.001009	16.199
0.01	45.81	191.8	2,437.2	2,245.4	191.8	2,583.9	2,392.1	0.6492	8.1488	7.4996	0.00101	14.67
0.012	49.42	206.9	2,442	2,235.1	206.9	2,590.3	2,383.4	0.6963	8.0849	7.3887	0.001012	12.358
0.014	52.55	220	2,446.1	2,226.2	220	2,595.8	2,375.8	0.7366	8.0311	7.2945	0.001013	10.691
0.016	55.31	231.6	2,449.7	2,218.2	231.6	2,600.6	2,369.1	0.772	7.9846	7.2126	0.001015	9.4306
0.018	57.8	241.9	2,453	2,211.1	242	2,605	2,363	0.8036	7.9437	7.1402	0.001016	8.4431
0.02	60.06	251.4	2,455.9	2,204.5	251.4	2,608.9	2,357.5	0.832	7.9072	7.0752	0.001017	7.648
0.04	75.86	317.6	2,476.4	2,158.8	317.6	2,636.1	2,318.4	1.0261	7.669	6.6429	0.001026	3.993
0.05	81.32	340.5	2,483.2	2,142.7	340.5	2,645.2	2,304.7	1.0912	7.593	6.5018	0.00103	3.24
0.06	85.93	359.8	2,489	2,129.1	359.9	2,652.9	2,292.9	1.1454	7.5311	6.3857	0.001033	2.7317
0.07	89.93	376.7	2,493.9	2,117.2	376.8	2,659.4	2,282.7	1.1921	7.479	6.2869	0.001036	2.3648
0.08	93.49	391.6	2,498.2	2,106.6	391.7	2,665.2	2,273.5	1.233	7.4339	6.2009	0.001039	2.0871
0.09	96.69	405.1	2,502.1	2,096.9	405.2	2,670.3	2,265.1	1.2696	7.3943	6.1246	0.001041	1.8694
0.1	99.61	417.4	2,505.5	2,088.1	417.5	2,674.9	2,257.4	1.3028	7.3588	6.0561	0.001043	1.6939
0.12	104.78	439.2	2,511.7	2,072.5	439.4	2,683.1	2,243.7	1.3609	7.2977	5.9367	0.001047	1.4284
0.14	109.29	458.3	2,516.9	2,058.6	458.4	2,690	2,231.6	1.411	7.2461	5.8351	0.001051	1.2366
0.16	113.3	475.2	2,521.4	2,046.2	475.4	2,696	2,220.7	1.4551	7.2014	5.7463	0.001054	1.0914
0.18	116.91	490.5	2,525.5	2,034.9	490.7	2,701.4	2,210.7	1.4945	7.1621	5.6676	0.001058	0.97747
0.2	120.21	504.5	2,529.1	2,024.6	504.7	2,706.2	2,201.5	1.5302	7.1269	5.5967	0.001061	0.88568
0.25	127.41	535.1	2,536.8	2,001.8	535.3	2,716.5	2,181.1	1.6072	7.0524	5.4452	0.001067	0.71866
0.3	133.52	561.1	2,543.2	1,982.1	561.4	2,724.9	2,163.5	1.6717	6.9916	5.3199	0.001073	0.60576
0.35	138.86	583.9	2,548.5	1,964.7	584.3	2,732	2,147.7	1.7274	6.9401	5.2128	0.001079	0.52418
0.4	143.61	604.2	2,553.1	1,948.9	604.7	2,738.1	2,133.4	1.7765	6.8955	5.119	0.001084	0.46238
0.5	151.83	639.5	2,560.7	1,921.2	640.1	2,748.1	2,108	1.8604	6.8207	4.9603	0.001093	0.37481
0.6	158.83	669.7	2,566.8	1,897	670.4	2,756.1	2,085.8	1.9308	6.7592	4.8284	0.001101	0.31558
0.7	164.95	696.2	2,571.9	1,875.6	697	2,762.8	2,065.8	1.9918	6.7071	4.7153	0.001108	0.27277
0.8	170.41	720	2,576	1,856.1	720.9	2,768.3	2,047.4	2.0457	6.6616	4.616	0.001115	0.24034
0.9	175.35	741.6	2,579.6	1,838	742.6	2,773	2,030.5	2.094	6.6213	4.5272	0.001121	0.21489
1	179.88	761.4	2,582.7	1,821.3	762.5	2,777.1	2,014.6	2.1381	6.585	4.447	0.001127	0.19436
1.1	184.06	779.8	2,585.4	1,805.6	781	2,780.6	1,999.6	2.1785	6.552	4.3735	0.001133	0.17745
1.2	187.96	797	2,587.8	1,790.8	798.3	2,783.7	1,985.4	2.2159	6.5217	4.3058	0.001139	0.16326
1.3	191.61	813.1	2,590	1,776.8	814.6	2,786.5	1,971.9	2.2508	6.4936	4.2428	0.001144	0.15119
1.4	195.04	828.4	2,591.7	1,763.3	830	2,788.8	1,958.9	2.2835	6.4675	4.1839	0.001149	0.14078
1.5	198.29	842.8	2,593.4	1,750.6	844.6	2,791	1,946.4	2.3143	6.443	4.1286	0.001154	0.13171
1.6	201.37	856.6	2,594.8	1,738.2	858.5	2,792.8	1,934.4	2.3435	6.4199	4.0765	0.001159	0.12374
1.7	204.31	869.8	2,596.2	1,726.4	871.7	2,794.5	1,922.7	2.3711	6.3981	4.027	0.001163	0.11667
1.8	207.11	882.4	2,597.2	1,714.9	884.5	2,795.9	1,911.4	2.3975	6.3775	3.98	0.001168	0.11037
1.9	209.8	894.5	2,598.3	1,703.8	896.7	2,797.2	1,900.5	2.4227	6.3578	3.9351	0.001172	0.1047
2	212.38	906.1	2,599.1	1,693	908.5	2,798.3	1,889.8	2.4468	6.339	3.8923	0.001177	0.099585
2.2	217.25	928.3	2,600.6	1,672.3	930.9	2,800.1	1,869.2	2.4921	6.3038	3.8116	0.001185	0.090698
2.4	221.79	949	2,601.6	1,652.6	951.9	2,801.4	1,849.6	2.5343	6.2712	3.7369	0.001193	0.083244
2.6	226.05	968.5	2,602.4	1,633.8	971.7	2,802.3	1,830.7	2.5736	6.2409	3.6672	0.001201	0.076899
2.8	230.06	987.1	2,602.9	1,615.8	990.5	2,802.9	1,812.4	2.6106	6.2124	3.6018	0.001209	0.071429
3	233.85	1,004.6	2,603.2	1,598.6	1,008.3	2,803.2	1,794.8	2.6455	6.1856	3.54	0.001217	0.066664
3.2	237.46	1,021.5	2,603.2	1,581.7	1,025.4	2,803.1	1,777.7	2.6787	6.1602	3.4815	0.001224	0.062475
3.4	240.9	1,037.6	2,603.1	1,565.5	1,041.8	2,802.9	1,761	2.7102	6.136	3.4258	0.001231	0.058761

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Table 3 (continued)

$p_{\text{sat.}}$	$T_{\text{sat.}}$	u_L	u_V	$\Delta u_{L\to V}$	h_L	h_V	$\Delta h_{L\to V}$	s_L	s_V	$\Delta s_{L\to V}$	v_L	v_V
3.6	244.18	1,053.1	2,602.8	1,549.7	1,057.6	2,802.4	1,744.8	2.7403	6.1129	3.3726	0.001239	0.055446
3.8	247.33	1,068.1	2,602.3	1,534.3	1,072.8	2,801.7	1,728.9	2.7691	6.0908	3.3217	0.001246	0.052467
4	250.35	1,082.5	2,601.7	1,519.2	1,087.5	2,800.8	1,713.3	2.7968	6.0696	3.2728	0.001253	0.049776
4.2	253.26	1,096.4	2,601	1,504.6	1,101.7	2,799.8	1,698.1	2.8234	6.0491	3.2257	0.001259	0.047332
4.4	256.07	1,109.9	2,600.2	1,490.2	1,115.5	2,798.6	1,683.1	2.849	6.0293	3.1803	0.001266	0.045102
4.6	258.78	1,123	2,599.2	1,476.2	1,128.9	2,797.3	1,668.4	2.8738	6.0102	3.1364	0.001273	0.043059
4.8	261.4	1,135.8	2,598.1	1,462.4	1,141.9	2,795.8	1,653.9	2.8978	5.9917	3.0939	0.00128	0.04118
5	263.94	1,148.2	2,597	1,448.8	1,154.6	2,794.2	1,639.6	2.921	5.9737	3.0527	0.001286	0.039446
5.5	269.97	1,177.9	2,593.7	1,415.7	1,185.1	2,789.7	1,604.6	2.9762	5.9307	2.9545	0.001303	0.035642
6	275.59	1,206	2,589.9	1,383.9	1,213.9	2,784.6	1,570.7	3.0278	5.8901	2.8623	0.001319	0.032448
6.5	280.86	1,232.7	2,585.7	1,353	1,241.4	2,778.9	1,537.5	3.0764	5.8516	2.7752	0.001336	0.029727
7	285.83	1,258.2	2,581	1,322.7	1,267.7	2,772.6	1,505	3.1224	5.8148	2.6924	0.001352	0.027378
7.5	290.54	1,282.6	2,575.9	1,293.3	1,292.9	2,765.9	1,473	3.1662	5.7793	2.6131	0.001368	0.02533
8	295.01	1,306.2	2,570.5	1,264.3	1,317.3	2,758.7	1,441.4	3.2081	5.745	2.5369	0.001385	0.023526
8.5	299.27	1,329	2,564.7	1,235.7	1,340.9	2,751	1,410.1	3.2483	5.7117	2.4634	0.001401	0.021923
9	303.35	1,351.1	2,558.5	1,207.4	1,363.9	2,742.9	1,379.1	3.287	5.6791	2.3922	0.001418	0.02049
9.5	307.25	1,372.6	2,552	1,179.4	1,386.2	2,734.4	1,348.2	3.3244	5.6473	2.3229	0.001435	0.019199
10	311	1,393.6	2,545.2	1,151.6	1,408.1	2,725.5	1,317.4	3.3606	5.616	2.2553	0.001453	0.01803
11	318.08	1,434	2,530.4	1,096.4	1,450.4	2,706.3	1,255.9	3.4303	5.5545	2.1242	0.001489	0.01599
12	324.68	1,473.2	2,514.2	1,041	1,491.5	2,685.4	1,194	3.4967	5.4939	1.9972	0.001526	0.014264
13	330.85	1,511.1	2,496.6	985.4	1,531.5	2,662.7	1,131.2	3.5608	5.4336	1.8728	0.001566	0.01278
14	336.67	1,548.5	2,477.1	928.6	1,571	2,637.9	1,066.9	3.6232	5.3727	1.7495	0.00161	0.011485
15	342.16	1,585.3	2,455.6	870.3	1,610.2	2,610.7	1,000.5	3.6846	5.3106	1.626	0.001657	0.010338
16	347.36	1,622.3	2,431.9	809.5	1,649.7	2,580.8	931.1	3.7457	5.2463	1.5006	0.001709	0.009309
17	352.29	1,659.9	2,405.2	745.3	1,690	2,547.5	857.5	3.8077	5.1787	1.371	0.001769	0.008371
18	356.99	1,699	2,374.8	675.8	1,732.1	2,509.8	777.7	3.8718	5.1061	1.2342	0.00184	0.007502
19	361.47	1,740.6	2,339.1	598.5	1,777.2	2,466	688.9	3.9401	5.0256	1.0855	0.001927	0.006677
20	365.75	1,786.4	2,295	508.6	1,827.2	2,412.3	585.1	4.0156	4.9314	0.9158	0.00204	0.005865
21	369.83	1,841.3	2,233.7	392.4	1,887.6	2,338.6	451	4.1064	4.8079	0.7015	0.002206	0.004996
22	373.71	1,951.8	2,092.9	141.1	2,011.3	2,173.1	161.7	4.2945	4.5446	0.2501	0.002704	0.003648
$p_{\text{cr.}}$	373.95	2,015.8	2,015.8	0	2,084.3	2,084.3	0	4.407	4.407	0	0.003106	0.003106

Values in brackets are arbitrary references. $p_{\text{cr.}} = 22.064\,\text{MPa}$