

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

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_{sat} is saturation temperature^w (the temperature for which both states will be present at the given pressure). Likewise, p_{sat} is saturation pressure (the pressure for which both states will be present at the given temperature). T_{cr} and p_{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 \square , and the thousand separator is a thin space \square , so that $1\ 234.5 \equiv 1.2345 \times 10^4$. Leading and trailing zeroes are not written. The PDF page is sized as Letter paper. Refer to freesteamtables.com to download the same data formatted differently.

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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](https://doi.org/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)

$\frac{\text{m}^3}{\text{kg}}$	$\frac{\text{kJ}}{\text{kg}}$	$\frac{\text{kJ}}{\text{kg}}$	$\frac{\text{kJ}}{\text{Kkg}}$	$^{\circ}\text{C}$	$\frac{\text{m}^3}{\text{kg}}$	$\frac{\text{kJ}}{\text{kg}}$	$\frac{\text{kJ}}{\text{kg}}$	$\frac{\text{kJ}}{\text{Kkg}}$	$^{\circ}\text{C}$	$\frac{\text{m}^3}{\text{kg}}$	$\frac{\text{kJ}}{\text{kg}}$	$\frac{\text{kJ}}{\text{kg}}$	$\frac{\text{kJ}}{\text{Kkg}}$
v	u	h	s	T	v	u	h	s	T	v	u	h	s
$p = 0.01 \text{ MPa}$ ($T_{\text{sat.}} = 45.806^{\circ}\text{C}$)					$p = 0.05 \text{ MPa}$ ($T_{\text{sat.}} = 81.317^{\circ}\text{C}$)					$p = 0.10 \text{ MPa}$ ($T_{\text{sat.}} = 99.606^{\circ}\text{C}$)			
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	2443.3	2592	8.1741	50	0.001012	209.3	209.4	0.7038	50	0.001012	209.3	209.4	0.7038
17.196	2515.5	2687.5	8.4489	100	3.4187	2511.5	2682.4	7.6953	100	1.6959	2506.2	2675.8	7.361
21.826	2661.3	2879.6	8.9049	200	4.3562	2660	2877.8	8.1592	200	2.1724	2658.3	2875.5	7.8356
26.446	2812.2	3076.7	9.2827	300	5.284	2811.6	3075.8	8.5386	300	2.6388	2810.6	3074.5	8.2172
35.68	3132.9	3489.7	9.8998	500	7.1338	3132.6	3489.3	9.1566	500	3.5655	3132.2	3488.7	8.8361
40.296	3303.3	3706.3	10.163	600	8.0576	3303.1	3706	9.4201	600	4.0279	3302.8	3705.6	9.0998
44.911	3480.8	3929.9	10.406	700	8.9812	3480.6	3929.7	9.6625	700	4.49	3480.4	3929.4	9.3424
49.527	3665.3	4160.6	10.631	800	9.9047	3665.2	4160.4	9.8882	800	4.9519	3665	4160.2	9.5681
54.142	3856.9	4398.3	10.843	900	10.828	3856.8	4398.2	10.1	900	5.4137	3856.6	4398	9.78
58.758	4055.2	4642.8	11.043	1000	11.751	4055.2	4642.7	10.3	1000	5.8754	4055.1	4642.6	9.98
63.373	4260	4893.7	11.233	1100	12.674	4260	4893.7	10.49	1100	6.3371	4259.8	4893.5	10.17
67.988	4470.8	5150.7	11.413	1200	13.598	4470.8	5150.7	10.67	1200	6.7988	4470.7	5150.6	10.35
81.834	5135.7	5954	11.909	1500	16.367	5135.6	5953.9	11.166	1500	8.1836	5135.5	5953.9	10.846
104.91	6327.9	7377	12.615	2000	20.982	6327.9	7377	11.872	2000	10.491	6327.9	7377	11.552
$p = 0.20 \text{ MPa}$ ($T_{\text{sat.}} = 120.210^{\circ}\text{C}$)					$p = 0.40 \text{ MPa}$ ($T_{\text{sat.}} = 143.608^{\circ}\text{C}$)					$p = 0.60 \text{ MPa}$ ($T_{\text{sat.}} = 158.826^{\circ}\text{C}$)			
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	2654.6	2870.7	7.5081	200	0.53433	2647.2	2860.9	7.1723	200	0.35212	2639.3	2850.6	6.9683
1.3162	2808.9	3072.1	7.8941	300	0.65489	2805.1	3067.1	7.5677	300	0.43442	2801.3	3062	7.374
1.7814	3131.4	3487.7	8.5152	500	0.88936	3129.8	3485.5	8.1933	500	0.592	3128.2	3483.4	8.0041
2.013	3302.2	3704.8	8.7792	600	1.0056	3301	3703.2	8.458	600	0.66976	3299.8	3701.7	8.2695
2.2443	3479.9	3928.8	9.022	700	1.1215	3479	3927.6	8.7012	700	0.74725	3478.1	3926.4	8.5131
2.4755	3664.7	4159.8	9.2479	800	1.2373	3663.9	4158.8	8.9273	800	0.82457	3663.2	4157.9	8.7395
2.7066	3856.3	4397.6	9.4598	900	1.353	3855.7	4396.9	9.1394	900	0.90178	3855.1	4396.2	8.9518
2.9375	4054.8	4642.3	9.6599	1000	1.4686	4054.3	4641.7	9.3396	1000	0.97893	4053.7	4641.1	9.1521
3.1685	4259.6	4893.3	9.8497	1100	1.5841	4259.2	4892.8	9.5295	1100	1.056	4258.8	4892.4	9.342
3.3994	4470.5	5150.4	10.03	1200	1.6997	4470.1	5150	9.7102	1200	1.1331	4469.7	5149.6	9.5228
4.0919	5135.4	5953.8	10.526	1500	2.0461	5135.2	5953.6	10.206	1500	1.3641	5134.9	5953.4	10.019
5.246	6327.7	7376.9	11.232	2000	2.6232	6327.6	7376.9	10.912	2000	1.749	6327.4	7376.8	10.725
$p = 0.80 \text{ MPa}$ ($T_{\text{sat.}} = 170.406^{\circ}\text{C}$)					$p = 1.0 \text{ MPa}$ ($T_{\text{sat.}} = 179.878^{\circ}\text{C}$)					$p = 1.2 \text{ MPa}$ ($T_{\text{sat.}} = 187.957^{\circ}\text{C}$)			
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	2631	2839.7	6.8176	200	0.20602	2622.3	2828.3	6.6955	200	0.16934	2612.9	2816.1	6.5909
0.32416	2797.6	3056.9	7.2345	300	0.25799	2793.6	3051.6	7.1246	300	0.21386	2789.7	3046.3	7.0335
0.44332	3126.6	3481.3	7.8692	500	0.35411	3125	3479.1	7.7641	500	0.29464	3123.3	3476.9	7.6779
0.50185	3298.6	3700.1	8.1354	600	0.40111	3297.5	3698.6	8.031	600	0.33394	3296.3	3697	7.9455
0.56011	3477.2	3925.3	8.3794	700	0.44783	3476.3	3924.1	8.2755	700	0.37297	3475.3	3922.9	8.1904
0.6182	3662.4	4157	8.6061	800	0.49438	3661.7	4156.1	8.5024	800	0.41184	3661	4155.2	8.4176
0.67619	3854.5	4395.5	8.8185	900	0.54083	3854	4394.8	8.715	900	0.45059	3853.3	4394	8.6303
0.73411	4053.2	4640.5	9.0189	1000	0.58721	4052.7	4639.9	8.9155	1000	0.48928	4052.3	4639.4	8.831
0.79197	4258.3	4891.9	9.2089	1100	0.63354	4257.9	4891.4	9.1056	1100	0.52792	4257.5	4891	9.0212
0.8498	4469.4	5149.2	9.3898	1200	0.67983	4469.1	5148.9	9.2866	1200	0.56652	4468.7	5148.5	9.2022
1.0232	5134.6	5953.2	9.8861	1500	0.81857	5134.4	5953	9.783	1500	0.68218	5134.2	5952.8	9.6987
1.3118	6327.4	7376.8	10.592	2000	1.0496	6327.2	7376.8	10.489	2000	0.87471	6327	7376.7	10.405

Table 1 (continued)

v	u	h	s	T	v	u	h	s	T	v	u	h	s	
$p = 1.4 \text{ MPa}$ ($T_{\text{sat.}} = 195.039 \text{ }^\circ\text{C}$)					$p = 1.6 \text{ MPa}$ ($T_{\text{sat.}} = 201.370 \text{ }^\circ\text{C}$)					$p = 1.8 \text{ MPa}$ ($T_{\text{sat.}} = 207.112 \text{ }^\circ\text{C}$)				
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	
$p = 2.0 \text{ MPa}$ ($T_{\text{sat.}} = 212.377 \text{ }^\circ\text{C}$)					$p = 2.5 \text{ MPa}$ ($T_{\text{sat.}} = 223.950 \text{ }^\circ\text{C}$)					$p = 3.0 \text{ MPa}$ ($T_{\text{sat.}} = 233.853 \text{ }^\circ\text{C}$)				
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	
$p = 3.5 \text{ MPa}$ ($T_{\text{sat.}} = 242.557 \text{ }^\circ\text{C}$)					$p = 4.0 \text{ MPa}$ ($T_{\text{sat.}} = 250.354 \text{ }^\circ\text{C}$)					$p = 4.5 \text{ MPa}$ ($T_{\text{sat.}} = 257.437 \text{ }^\circ\text{C}$)				
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
$p = 5.0 \text{ MPa}$ ($T_{\text{sat.}} = 263.941 \text{ }^\circ\text{C}$)					$p = 5.5 \text{ MPa}$ ($T_{\text{sat.}} = 269.965 \text{ }^\circ\text{C}$)					$p = 6.0 \text{ MPa}$ ($T_{\text{sat.}} = 275.585 \text{ }^\circ\text{C}$)			
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
$p = 6.5 \text{ MPa}$ ($T_{\text{sat.}} = 280.858 \text{ }^\circ\text{C}$)					$p = 7.0 \text{ MPa}$ ($T_{\text{sat.}} = 285.829 \text{ }^\circ\text{C}$)					$p = 7.5 \text{ MPa}$ ($T_{\text{sat.}} = 290.535 \text{ }^\circ\text{C}$)			
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
$p = 8 \text{ MPa}$ ($T_{\text{sat.}} = 295.008 \text{ }^\circ\text{C}$)					$p = 9 \text{ MPa}$ ($T_{\text{sat.}} = 303.345 \text{ }^\circ\text{C}$)					$p = 10 \text{ MPa}$ ($T_{\text{sat.}} = 310.997 \text{ }^\circ\text{C}$)			
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

Table 1 (continued)

v	u	h	s	T	v	u	h	s	T	v	u	h	s	
$p = 12 \text{ MPa}$ ($T_{\text{sat.}} = 324.675 \text{ }^\circ\text{C}$)					$p = 14 \text{ MPa}$ ($T_{\text{sat.}} = 336.666 \text{ }^\circ\text{C}$)					$p = 16 \text{ MPa}$ ($T_{\text{sat.}} = 347.355 \text{ }^\circ\text{C}$)				
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	1324.5	1341.2	3.2401	300	0.001382	1319.9	1339.2	3.2319	300	0.001375	1315.4	1337.4	3.224	
0.026828	3028.1	3350	6.4903	500	0.022544	3008.5	3324.1	6.3932	500	0.019323	2988.1	3297.3	6.3046	
0.031651	3229.1	3608.9	6.8054	600	0.026845	3216	3591.8	6.7191	600	0.023238	3202.6	3574.4	6.6421	
0.036109	3424.4	3857.7	7.0753	700	0.030761	3414.6	3845.3	6.9941	700	0.026749	3404.9	3832.9	6.9224	
0.040375	3620.6	4105.1	7.3173	800	0.034479	3613.1	4095.8	7.2391	800	0.030058	3605.4	4086.3	7.1703	
0.044524	3820.4	4354.7	7.5396	900	0.03808	3814.3	4347.4	7.4632	900	0.033247	3808	4340	7.3964	
0.048599	4024.8	4608	7.7467	1000	0.041605	4019.6	4602.1	7.6716	1000	0.036361	4014.5	4596.3	7.606	
0.052622	4234.1	4865.6	7.9416	1100	0.045079	4229.8	4860.9	7.8673	1100	0.039422	4225.5	4856.3	7.8025	
0.056608	4448.6	5127.9	8.1259	1200	0.048516	4445	5124.2	8.0523	1200	0.042447	4441.2	5120.4	7.9882	
0.068428	5120.8	5941.9	8.6284	1500	0.058687	5118.3	5939.9	8.5559	1500	0.051381	5115.8	5937.9	8.4929	
0.087892	6319.5	7374.2	9.3392	2000	0.075404	6318	7373.7	9.2674	2000	0.066037	6316.6	7373.2	9.2052	
$p = 18 \text{ MPa}$ ($T_{\text{sat.}} = 356.992 \text{ }^\circ\text{C}$)					$p = 20 \text{ MPa}$ ($T_{\text{sat.}} = 365.749 \text{ }^\circ\text{C}$)					$p = 30 \text{ MPa}$ ($p > p_{cr.}$)				
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	1311.2	1335.8	3.2164	300	0.001361	1307.2	1334.4	3.2091	300	0.001332	1288.9	1328.9	3.176	
0.01681	2967.1	3269.7	6.2223	500	0.014793	2945.3	3241.2	6.1446	500	0.00869	2824	3084.7	5.7956	
0.020431	3189	3556.8	6.572	600	0.018185	3175.3	3539	6.5075	600	0.011445	3103.4	3446.7	6.2373	
0.023629	3395.1	3820.4	6.8579	700	0.021133	3385.1	3807.8	6.799	700	0.013653	3334.3	3743.9	6.5598	
0.026619	3597.8	4076.9	7.1089	800	0.023869	3590.1	4067.5	7.0531	800	0.015628	3551.2	4020	6.83	
0.029489	3801.9	4332.7	7.3368	900	0.026483	3795.7	4325.4	7.2829	900	0.017473	3764.6	4288.8	7.0695	
0.032282	4009.4	4590.5	7.5476	1000	0.02902	4004.3	4584.7	7.495	1000	0.01924	3978.6	4555.8	7.288	
0.035023	4221.2	4851.6	7.745	1100	0.031504	4216.8	4846.9	7.6933	1100	0.020953	4195.2	4823.8	7.4906	
0.037727	4437.5	5116.6	7.9313	1200	0.033952	4433.8	5112.8	7.8802	1200	0.02263	4415.3	5094.2	7.6807	
0.045699	5113.3	5935.9	8.4372	1500	0.041154	5110.8	5933.9	8.3871	1500	0.027521	5098.6	5924.2	8.1932	
0.058753	6315.2	7372.8	9.1502	2000	0.052925	6313.8	7372.3	9.101	2000	0.035443	6306.8	7370.1	8.9108	
$p = 40 \text{ MPa}$ ($p > p_{cr.}$)					$p = 50 \text{ MPa}$ ($p > p_{cr.}$)					$p = 100 \text{ MPa}$ ($p > p_{cr.}$)				
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	1273.3	1325.6	3.1473	300	0.001288	1259.6	1324	3.1218	300	0.001215	1207.6	1329.1	3.0219	
0.005623	2681.6	2906.5	5.4744	500	0.00389	2528.1	2722.6	5.1762	500	0.001893	2126.9	2316.2	4.49	
0.008089	3026.8	3350.4	6.017	600	0.006108	2947.1	3252.5	5.8245	600	0.002672	2597.9	2865.1	5.1581	
0.00993	3281.9	3679.1	6.374	700	0.007717	3228.8	3614.6	6.2178	700	0.003546	2976.1	3330.7	5.6639	
0.011521	3511.8	3972.6	6.6612	800	0.009072	3472.2	3925.8	6.5225	800	0.004336	3281.7	3715.3	6.0406	
0.01298	3733.3	4252.5	6.9106	900	0.010296	3702	4216.8	6.7819	900	0.005042	3551.4	4055.6	6.344	
0.01436	3952.9	4527.3	7.1355	1000	0.011441	3927.4	4499.4	7.0131	1000	0.00569	3804	4373	6.6038	
0.015686	4173.7	4801.1	7.3425	1100	0.012534	4152.2	4778.9	7.2244	1100	0.006296	4048.8	4678.4	6.8347	
0.016976	4396.9	5075.9	7.5357	1200	0.01359	4378.6	5058.1	7.4207	1200	0.006873	4290.3	4977.6	7.045	
0.020709	5086.2	5914.6	8.0536	1500	0.016626	5074.1	5905.4	7.944	1500	0.008491	5015.3	5864.4	7.593	
0.026705	6299.9	7368.1	8.775	2000	0.021464	6293	7366.2	8.6691	2000	0.010998	6259.4	7359.2	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_{sat}	p_{sat}	u_L	u_V	Δu_{L-V}	h_L	h_V	Δh_{L-V}	s_L	s_V	Δs_{L-V}	v_L
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	$\Delta u_{L \rightarrow V}$	h_L	h_V	$\Delta h_{L \rightarrow V}$	s_L	s_V	$\Delta s_{L \rightarrow V}$	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. $T_{\text{cr.}} = 373.946 \text{ }^\circ\text{C}$

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_{sat}	T_{sat}	u_L	u_V	$\Delta u_{L \rightarrow V}$	h_L	h_V	$\Delta h_{L \rightarrow V}$	s_L	s_V	$\Delta s_{L \rightarrow V}$	v_L
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	

Table 3 (continued)

$p_{\text{sat.}}$	$T_{\text{sat.}}$	u_L	u_V	$\Delta u_{L \rightarrow V}$	h_L	h_V	$\Delta h_{L \rightarrow V}$	s_L	s_V	$\Delta s_{L \rightarrow V}$	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. $p_{\text{cr.}} = 22.064 \text{ MPa}$