THERMODYNAMICS: PROPERTIES OF ORDINARY WATER

Graham R. Hendra

Spring 2018

TABLE OF CONTENTS

COMPARISON TO TABLES IN *Fundamentals of Thermodynamics, 8th Edition*

Similarities:

- The same state points are represented
- The reference states for tabulation of u, h, and s are the same

Differences:

- The property model used to generate the data is slightly different. This leads to:
  - A slightly different location for the triple point: $(0.01\,^\circ\mathrm{C}, 611.7\,\mathrm{Pa})$ instead of $(0.01\,^\circ\mathrm{C}, 611.3\,\mathrm{Pa})$
  - A slightly different location for the critical point: $(373.95\,^\circ\mathrm{C}, 22.064\,\mathrm{MPa})$ instead of $(374.1\,^\circ\mathrm{C}, 22.089\,\mathrm{MPa})$
  - Slightly different properties at some state points (discrepancies typically in the last decimal place or two)
- Some tables are partitioned in slightly different ways:
  - Each saturation table displays v, u, h, and s (as opposed to one table for v and u and another table for h and s)
  - Most superheat tables display 3 pressure values together, rather than 2
- Values are generally represented with a given number of significant figures, rather than a given number of decimal places
- In the compressed liquid table, the row for saturated liquid water appears last (rather than first)

Table B.1.1: Liquid Water/Water Vapour (Temperature-indexed)

T	P_{sat}	v [m^3/kg]			u [kJ/kg]			h [kJ/kg]			s [kJ/(kgK)]		
[°C]	[kPa]	v_f	v_{fg}	v_g	u_f†	u_{fg}	u_g†	h_f†	h_{fg}	h_g†	s_f†	s_{fg}	s_g†
0.01	0.611 7	0.001 000 2	205.99	205.99	0.000	2 374.9	2 374.9	0.001	2 500.9	2 500.9	0.000 00	9.155 5	9.155 5
5	0.872 6	0.001 000 1	147.01	147.01	21.019	2 360.8	2 381.8	21.020	2 489.0	2 510.1	0.076 25	8.948 6	9.024 8
10	1.228 2	0.001 000 3	106.30	106.30	42.020	2 346.6	2 388.6	42.021	2 477.2	2 519.2	0.151 09	8.748 7	8.899 8
15	1.705 8	0.001 000 9	77.874	77.875	62.980	2 332.5	2 395.5	62.981	2 465.4	2 528.3	0.224 46	8.555 8	8.780 3
20	2.339 3	0.001 001 8	57.756	57.757	83.912	2 318.4	2 402.3	83.914	2 453.5	2 537.4	0.296 48	8.369 5	8.666 0
25	3.169 9	0.001 003 0	43.336	43.337	104.83	2 304.3	2 409.1	104.83	2 441.7	2 546.5	0.367 22	8.189 4	8.556 6
30	4.247 0	0.001 004 4	32.877	32.878	125.73	2 290.2	2 415.9	125.73	2 429.8	2 555.5	0.436 75	8.015 2	8.452 0
35	5.629 0	0.001 006 0	25.204	25.205	146.63	2 276.0	2 422.7	146.63	2 417.9	2 564.5	0.505 13	7.846 6	8.351 7
40	7.384 9	0.001 007 9	19.514	19.515	167.53	2 261.9	2 429.4	167.53	2 405.0	2 573.5	0.572 40	7.683 1	8.255 5
45	9.595 0	0.001 009 9	15.251	15.252	188.43	2 247.7	2 436.1	188.43	2 393.0	2 582.4	0.638 61	7.524 7	8.163 3
50	12.352	0.001 012 1	12.026	12.027	209.33	2 233.4	2 442.7	209.34	2 381.9	2 591.3	0.703 81	7.371 0	8.074 8
55	15.762	0.001 014 6	9.563 3	9.564 3	230.24	2 219.1	2 449.3	230.26	2 369.8	2 600.1	0.768 02	7.221 8	7.989 8
60	19.946	0.001 017 1	7.666 2	7.667 2	251.16	2 204.7	2 455.9	251.18	2 357.7	2 608.8	0.831 29	7.076 9	7.908 1
65	25.042	0.001 019 9	6.192 5	6.193 5	272.09	2 190.3	2 462.4	272.12	2 345.4	2 617.5	0.893 65	6.935 9	7.829 6
70	31.201	0.001 022 8	5.038 5	5.039 5	293.03	2 175.8	2 468.9	293.07	2 333.0	2 626.1	0.955 13	6.798 9	7.754 0
75	38.595	0.001 025 8	4.127 9	4.128 9	313.99	2 161.3	2 475.2	314.03	2 320.6	2 634.6	1.015 8	6.665 4	7.681 2
80	47.414	0.001 029 1	3.404 1	3.405 2	334.96	2 146.6	2 481.6	335.01	2 308.0	2 643.0	1.075 6	6.535 5	7.611 1
85	57.867	0.001 032 4	2.824 8	2.825 8	355.95	2 131.9	2 487.8	356.01	2 295.3	2 651.3	1.134 6	6.408 8	7.543 4
90	70.182	0.001 036 0	2.358 0	2.359 1	376.97	2 117.0	2 493.0	377.04	2 282.5	2 659.5	1.192 9	6.285 3	7.478 1
95	84.608	0.001 039 6	1.979 5	1.980 6	398.00	2 102.0	2 500.0	398.09	2 269.5	2 667.6	1.250 4	6.164 7	7.415 1
100	101.42	0.001 043 5	1.670 7	1.671 8	419.06	2 086.0	2 506.0	419.17	2 256.4	2 675.6	1.307 2	6.046 9	7.354 1
105	120.90	0.001 047 4	1.417 3	1.418 4	440.15	2 071.8	2 511.9	440.27	2 243.1	2 683.4	1.363 3	5.931 8	7.295 2
110	143.38	0.001 051 6	1.208 2	1.209 3	461.26	2 056.4	2 517.7	461.42	2 229.6	2 691.1	1.418 8	5.819 3	7.238 1
115	169.18	0.001 055 9	1.034 8	1.035 8	482.41	2 040.9	2 523.3	482.59	2 215.0	2 698.6	1.473 7	5.709 1	7.182 8
120	198.67	0.001 060 3	0.890 15	0.891 21	503.60	2 025.3	2 528.9	503.81	2 202.1	2 705.9	1.527 9	5.601 2	7.129 1
125	232.24	0.001 064 9	0.768 96	0.770 03	524.83	2 009.4	2 534.3	525.07	2 188.0	2 713.1	1.581 6	5.495 5	7.077 0

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.1: Liquid Water/Water Vapour (Temperature-indexed)

T	P_{sat}	v [m^3/kg]			u [kJ/kg]			h [kJ/kg]			s [kJ/(kgK)]		
[°C]	[kPa]	v_f	v_{fg}	v_g	u_f †	u_{fg}	u_g †	h_f †	h_{fg}	h_g †	s_f †	s_{fg}	s_g †
130	270.28	0.001 069 7	0.666 93	0.668 00	546.09	1 993.4	2 539.5	546.38	2 173.7	2 720.1	1.634 6	5.391 8	7.026 4
135	313.23	0.001 074 6	0.580 65	0.581 73	567.41	1 977.2	2 544.7	567.74	2 159.1	2 726.9	1.687 2	5.290 0	6.977 2
140	361.54	0.001 079 8	0.507 37	0.508 45	588.77	1 960.8	2 549.6	589.16	2 144.3	2 733.4	1.739 2	5.190 1	6.929 3
145	415.68	0.001 085 0	0.444 88	0.445 96	610.19	1 944.2	2 554.4	610.64	2 129.2	2 739.8	1.790 7	5.091 9	6.882 6
150	476.16	0.001 090 5	0.391 36	0.392 45	631.66	1 927.4	2 559.1	632.18	2 113.7	2 745.9	1.841 8	4.995 3	6.837 1
155	543.50	0.001 096 2	0.345 36	0.346 46	653.19	1 910.3	2 563.5	653.79	2 098.0	2 751.8	1.892 4	4.900 2	6.792 6
160	618.23	0.001 102 0	0.305 68	0.306 78	674.79	1 892.0	2 567.8	675.47	2 081.0	2 757.4	1.942 6	4.806 6	6.749 1
165	700.93	0.001 108 0	0.271 32	0.272 43	696.46	1 875.4	2 571.9	697.24	2 065.6	2 762.8	1.992 3	4.714 3	6.706 6
170	792.19	0.001 114 3	0.241 48	0.242 59	718.20	1 857.5	2 575.7	719.08	2 048.8	2 767.9	2.041 7	4.623 3	6.665 0
175	892.60	0.001 120 7	0.215 46	0.216 58	740.02	1 839.4	2 579.4	741.02	2 031.7	2 772.7	2.090 6	4.533 5	6.624 1
180	1 002.8	0.001 127 4	0.192 71	0.193 84	761.92	1 820.9	2 582.8	763.05	2 014.2	2 777.2	2.139 2	4.444 8	6.584 0
185	1 123.5	0.001 134 3	0.172 77	0.173 90	783.91	1 802.1	2 586.0	785.19	1 996.2	2 781.4	2.187 5	4.357 1	6.544 7
190	1 255.2	0.001 141 5	0.155 22	0.156 36	805.00	1 783.0	2 589.0	807.43	1 977.9	2 785.3	2.235 5	4.270 4	6.505 9
195	1 398.8	0.001 148 9	0.139 74	0.140 89	828.18	1 763.6	2 591.7	829.79	1 959.0	2 788.8	2.283 2	4.184 6	6.467 8
200	1 554.9	0.001 156 5	0.126 05	0.127 21	850.47	1 743.7	2 594.2	852.27	1 939.7	2 792.0	2.330 5	4.099 6	6.430 2
205	1 724.3	0.001 164 5	0.113 91	0.115 08	872.87	1 723.5	2 596.4	874.88	1 919.9	2 794.8	2.377 7	4.015 4	6.393 0
210	1 907.7	0.001 172 7	0.103 12	0.104 29	895.39	1 702.9	2 598.3	897.63	1 899.6	2 797.3	2.424 5	3.931 8	6.356 3
215	2 105.8	0.001 181 3	0.093 498	0.094 679	918.04	1 681.9	2 599.9	920.53	1 878.8	2 799.3	2.471 2	3.848 8	6.320 0
220	2 319.6	0.001 190 2	0.084 902	0.086 092	940.82	1 660.4	2 601.2	943.58	1 857.4	2 800.9	2.517 7	3.766 3	6.284 0
225	2 549.7	0.001 199 4	0.077 204	0.078 403	963.74	1 638.5	2 602.2	966.80	1 835.4	2 802.1	2.564 0	3.684 3	6.248 3
230	2 797.1	0.001 209 0	0.070 294	0.071 503	986.81	1 616.1	2 602.9	990.19	1 812.7	2 802.9	2.610 1	3.602 7	6.212 8
235	3 062.5	0.001 219 0	0.064 079	0.065 298	1 010.0	1 593.2	2 603.2	1 013.8	1 789.4	2 803.2	2.656 1	3.521 4	6.177 5
240	3 346.9	0.001 229 5	0.058 476	0.059 705	1 033.4	1 569.7	2 603.1	1 037.6	1 765.4	2 802.0	2.702 0	3.440 3	6.142 3
245	3 651.2	0.001 240 3	0.053 414	0.054 654	1 057.0	1 545.6	2 602.7	1 061.5	1 740.7	2 802.2	2.747 8	3.359 4	6.107 2
250	3 976.2	0.001 251 7	0.048 831	0.050 083	1 080.8	1 521.0	2 601.8	1 085.8	1 715.2	2 800.9	2.793 5	3.278 5	6.072 1

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.1: Liquid Water/Water Vapour (Temperature-indexed)

T	P_{sat}	v [m^3/kg]			u [kJ/kg]			h [kJ/kg]			s [kJ/(kgK)]		
[°C]	[kPa]	v_f	v_{fg}	v_g	u_f †	u_{fg}	u_g †	h_f †	h_{fg}	h_g †	s_f †	s_{fg}	s_g †
255	4 322.9	0.001 263 6	0.044 675	0.045 938	1 104.8	1 495.7	2 600.5	1 110.2	1 688.8	2 799.1	2.839 2	3.197 7	6.036 9
260	4 692.3	0.001 276 1	0.040 897	0.042 173	1 128.0	1 469.7	2 598.7	1 134.0	1 661.6	2 796.6	2.884 9	3.116 7	6.001 6
265	5 085.3	0.001 289 2	0.037 457	0.038 746	1 153.4	1 443.0	2 596.5	1 159.0	1 633.5	2 793.5	2.930 7	3.035 4	5.966 1
270	5 502.0	0.001 303 0	0.034 318	0.035 621	1 178.1	1 415.6	2 593.7	1 185.3	1 604.4	2 789.7	2.976 5	2.953 9	5.930 4
275	5 946.4	0.001 317 5	0.031 448	0.032 766	1 203.1	1 387.3	2 590.3	1 210.9	1 574.3	2 785.2	3.022 4	2.872 0	5.894 4
280	6 416.6	0.001 332 8	0.028 820	0.030 153	1 228.3	1 358.1	2 586.4	1 236.9	1 542.0	2 779.9	3.068 5	2.789 4	5.857 9
285	6 914.7	0.001 349 1	0.026 407	0.027 756	1 253.9	1 327.9	2 581.8	1 263.2	1 510.5	2 773.7	3.114 7	2.706 2	5.820 9
290	7 441.8	0.001 366 3	0.024 189	0.025 555	1 279.9	1 296.7	2 576.5	1 290.0	1 476.7	2 766.7	3.161 2	2.622 2	5.783 4
295	7 999.1	0.001 384 6	0.022 144	0.023 529	1 306.2	1 264.3	2 570.5	1 317.3	1 441.4	2 758.7	3.208 0	2.537 1	5.745 1
300	8 587.9	0.001 404 2	0.020 256	0.021 660	1 332.9	1 230.7	2 563.6	1 345.0	1 404.6	2 749.6	3.255 2	2.450 7	5.705 9
305	9 209.4	0.001 425 2	0.018 508	0.019 933	1 360.2	1 195.7	2 555.9	1 373.3	1 366.1	2 739.4	3.302 8	2.362 9	5.665 7
310	9 865.1	0.001 447 9	0.016 887	0.018 335	1 387.9	1 159.1	2 547.1	1 402.2	1 325.7	2 727.9	3.351 0	2.273 4	5.624 4
315	10 556.	0.001 472 4	0.015 379	0.016 851	1 416.3	1 120.9	2 537.2	1 431.8	1 283.2	2 715.1	3.399 8	2.181 8	5.581 6
320	11 284.	0.001 499 0	0.013 972	0.015 471	1 445.3	1 080.7	2 526.0	1 462.2	1 238.4	2 700.6	3.449 4	2.087 8	5.537 2
325	12 051.	0.001 528 3	0.012 655	0.014 183	1 475.1	1 038.3	2 513.4	1 493.5	1 190.8	2 684.3	3.500 0	1.990 8	5.490 8
330	12 858.	0.001 560 6	0.011 418	0.012 979	1 505.8	993.35	2 499.2	1 525.9	1 140.2	2 666.0	3.551 8	1.890 3	5.442 2
335	13 707.	0.001 596 7	0.010 251	0.011 847	1 537.6	945.39	2 482.0	1 559.5	1 085.9	2 645.4	3.605 0	1.785 6	5.390 6
340	14 600.	0.001 637 6	0.009 143 1	0.010 781	1 570.6	893.82	2 464.4	1 594.5	1 027.3	2 621.8	3.660 1	1.675 5	5.335 6
345	15 540.	0.001 684 6	0.008 084 5	0.009 769 0	1 605.3	837.79	2 443.1	1 631.5	963.42	2 594.9	3.717 6	1.558 6	5.276 2
350	16 529.	0.001 740 0	0.007 062 4	0.008 802 4	1 642.1	776.01	2 418.1	1 670.9	892.75	2 563.6	3.778 4	1.432 6	5.211 0
355	17 570.	0.001 807 9	0.006 060 6	0.007 868 4	1 681.0	706.44	2 388.4	1 713.7	812.93	2 526.6	3.843 9	1.294 2	5.138 0
360	18 666.	0.001 895 4	0.005 053 9	0.006 949 3	1 726.3	625.49	2 351.8	1 761.7	719.83	2 481.5	3.916 7	1.136 9	5.053 6
365	19 821.	0.002 017 2	0.003 994 3	0.006 011 5	1 777.8	526.00	2 303.8	1 817.8	605.18	2 422.9	4.001 4	0.948 33	4.949 7
370	21 043.	0.002 215 2	0.002 739 2	0.004 954 4	1 844.1	386.19	2 230.3	1 890.7	443.83	2 334.5	4.111 2	0.690 09	4.801 2
373.95	22 064.	0.003 105 6	0	0.003 105 6	2 015.7	0	2 015.7	2 084.3	0	2 084.3	4.407 0	0	4.407 0

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.2: Liquid Water/Water Vapour (Pressure-indexed)

P	T_{sat}	v [m^3/kg]			u [kJ/kg]			h [kJ/kg]			s [kJ/(kgK)]		
[kPa]	[°C]	v_f	v_{fg}	v_g	u_f†	u_{fg}	u_g†	h_f†	h_{fg}	h_g†	s_f†	s_{fg}	s_g†
0.611 7	0.01	0.001 000 2	205.99	205.99	0.000	2 374.9	2 374.9	0.001	2 500.9	2 500.9	0.000 00	9.155 5	9.155 5
1	6.97	0.001 000 1	129.18	129.18	29.298	2 355.2	2 384.5	29.299	2 484.4	2 513.7	0.105 91	8.869 0	8.974 9
1.5	13.02	0.001 000 7	87.958	87.959	54.681	2 338.1	2 392.8	54.683	2 470.0	2 524.7	0.195 56	8.631 4	8.827 0
2	17.49	0.001 001 4	66.986	66.987	73.426	2 325.5	2 398.9	73.428	2 459.4	2 532.9	0.260 56	8.462 0	8.722 6
2.5	21.08	0.001 002 1	54.239	54.240	88.417	2 315.4	2 403.8	88.420	2 450.0	2 539.4	0.311 82	8.330 2	8.642 0
3	24.08	0.001 002 8	45.652	45.653	100.97	2 306.9	2 407.9	100.98	2 443.9	2 544.8	0.354 29	8.222 1	8.576 4
4	28.96	0.001 004 1	34.790	34.791	121.38	2 293.1	2 414.5	121.39	2 432.3	2 553.7	0.422 39	8.051 0	8.473 4
5	32.87	0.001 005 3	28.184	28.185	137.74	2 282.1	2 419.8	137.75	2 422.0	2 560.7	0.476 20	7.917 6	8.393 8
7.5	40.29	0.001 008 0	19.232	19.233	168.74	2 261.0	2 429.8	168.75	2 405.3	2 574.0	0.576 27	7.673 8	8.250 1
10	45.81	0.001 010 3	14.669	14.670	191.80	2 245.4	2 437.2	191.81	2 392.1	2 583.9	0.649 20	7.499 6	8.148 8
15	53.97	0.001 014 0	10.019	10.020	225.93	2 222.1	2 447.0	225.94	2 372.3	2 598.3	0.754 86	7.252 2	8.007 1
20	60.06	0.001 017 2	7.646 9	7.648 0	251.40	2 204.6	2 455.0	251.42	2 357.5	2 608.9	0.832 02	7.075 2	7.907 2
25	64.96	0.001 019 8	6.202 2	6.203 2	271.93	2 190.4	2 462.4	271.96	2 345.5	2 617.4	0.893 19	6.937 0	7.830 2
30	69.10	0.001 022 2	5.227 4	5.228 4	289.24	2 178.5	2 467.7	289.27	2 335.3	2 624.5	0.944 07	6.823 4	7.767 5
40	75.86	0.001 026 4	3.992 0	3.993 0	317.58	2 158.7	2 476.3	317.62	2 318.4	2 636.1	1.026 1	6.642 9	7.669 0
50	81.32	0.001 029 9	3.239 0	3.240 0	340.49	2 142.7	2 483.2	340.54	2 304.7	2 645.2	1.091 2	6.501 8	7.593 0
75	91.76	0.001 037 2	2.215 9	2.217 0	384.36	2 111.8	2 496.1	384.44	2 277.9	2 662.4	1.213 2	6.242 5	7.455 7
100	99.61	0.001 043 2	1.692 9	1.693 9	417.40	2 088.2	2 505.6	417.50	2 257.4	2 674.9	1.302 8	6.056 1	7.358 8
125	105.97	0.001 048 2	1.373 8	1.374 9	444.22	2 068.8	2 513.0	444.35	2 240.5	2 684.9	1.374 1	5.909 9	7.284 0
150	111.35	0.001 052 7	1.158 2	1.159 3	466.97	2 052.2	2 519.2	467.13	2 225.0	2 693.1	1.433 7	5.789 3	7.223 0
175	116.04	0.001 056 8	1.002 5	1.003 6	486.82	2 037.7	2 524.5	487.00	2 213.1	2 700.1	1.485 0	5.686 5	7.171 5
200	120.21	0.001 060 5	0.884 62	0.885 68	504.49	2 024.6	2 529.1	504.70	2 201.5	2 706.2	1.530 2	5.596 7	7.126 9
225	123.97	0.001 064 0	0.792 14	0.793 20	520.47	2 012.7	2 533.2	520.71	2 190.9	2 711.6	1.570 6	5.517 0	7.087 6
250	127.41	0.001 067 2	0.717 59	0.718 66	535.08	2 001.7	2 536.8	535.34	2 181.1	2 716.5	1.607 2	5.445 2	7.052 4
275	130.58	0.001 070 3	0.656 18	0.657 25	548.56	1 991.6	2 540.1	548.86	2 172.0	2 720.9	1.640 8	5.379 9	7.020 7
300	133.52	0.001 073 2	0.604 69	0.605 76	561.10	1 982.1	2 543.2	561.43	2 163.5	2 724.9	1.671 7	5.319 9	6.991 6
325	136.27	0.001 075 9	0.560 86	0.561 94	572.84	1 973.1	2 545.9	573.19	2 155.4	2 728.6	1.700 5	5.264 4	6.964 9
350	138.86	0.001 078 6	0.523 10	0.524 18	583.88	1 964.6	2 548.5	584.26	2 147.7	2 731.0	1.727 4	5.212 8	6.940 1
375	141.30	0.001 081 1	0.490 21	0.491 29	594.32	1 956.6	2 550.9	594.73	2 140.4	2 735.1	1.752 6	5.164 4	6.917 1

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.2: Liquid Water/Water Vapour (Pressure-indexed)

P	T_{sat}	v [m^3/kg]			u [kJ/kg]			h [kJ/kg]			s [kJ/(kgK)]		
[kPa]	[°C]	v_f	v_{fg}	v_g	u_f †	u_{fg}	u_g †	h_f †	h_{fg}	h_g †	s_f †	s_{fg}	s_g †
400	143.61	0.001 083 6	0.461 30	0.462 38	604.22	1 948.9	2 553.1	604.65	2 133.4	2 738.1	1.776 5	5.119 0	6.895 5
450	147.90	0.001 088 2	0.412 81	0.413 90	622.65	1 934.5	2 557.1	623.14	2 120.2	2 743.4	1.820 5	5.035 6	6.856 0
500	151.83	0.001 092 5	0.373 71	0.374 81	639.54	1 921.2	2 560.7	640.09	2 108.0	2 748.1	1.860 4	4.960 3	6.820 7
550	155.46	0.001 096 7	0.341 50	0.342 60	655.16	1 908.7	2 563.9	655.76	2 096.6	2 752.3	1.897 0	4.891 6	6.788 6
600	158.83	0.001 100 6	0.314 48	0.315 58	669.72	1 897.1	2 566.8	670.38	2 085.8	2 756.1	1.930 8	4.828 4	6.759 2
650	161.98	0.001 104 4	0.291 49	0.292 59	683.36	1 886.1	2 569.4	684.08	2 075.5	2 759.6	1.962 3	4.769 9	6.732 2
700	164.95	0.001 108 0	0.271 67	0.272 77	696.23	1 875.6	2 571.8	697.00	2 065.8	2 762.8	1.991 8	4.715 3	6.707 1
750	167.75	0.001 111 4	0.254 40	0.255 51	708.40	1 865.6	2 574.0	709.24	2 056.4	2 765.6	2.019 5	4.664 1	6.683 6
800	170.41	0.001 114 8	0.239 23	0.240 34	719.97	1 856.1	2 576.0	720.86	2 047.4	2 768.3	2.045 7	4.616 0	6.661 6
850	172.94	0.001 118 0	0.225 77	0.226 89	731.00	1 846.9	2 577.9	731.95	2 038.8	2 770.8	2.070 5	4.570 4	6.640 9
900	175.35	0.001 121 2	0.213 77	0.214 89	741.55	1 838.1	2 579.6	742.56	2 030.5	2 773.0	2.094 0	4.527 2	6.621 3
950	177.66	0.001 124 2	0.202 98	0.204 10	751.67	1 829.6	2 581.2	752.74	2 022.4	2 775.1	2.116 5	4.486 2	6.602 7
1 000	179.88	0.001 127 2	0.193 23	0.194 36	761.39	1 821.4	2 582.7	762.52	2 014.6	2 777.1	2.138 1	4.447 0	6.585 0
1 100	184.06	0.001 133 0	0.176 32	0.177 45	779.78	1 805.7	2 585.5	781.03	1 999.6	2 780.6	2.178 5	4.373 5	6.552 0
1 200	187.96	0.001 138 5	0.162 12	0.163 26	796.96	1 790.9	2 587.8	798.33	1 985.4	2 783.7	2.215 9	4.305 8	6.521 7
1 300	191.60	0.001 143 8	0.150 04	0.151 19	813.11	1 776.8	2 589.9	814.60	1 971.9	2 786.5	2.250 8	4.242 8	6.493 6
1 400	195.04	0.001 148 9	0.139 63	0.140 78	828.36	1 763.4	2 591.8	829.97	1 958.9	2 788.8	2.283 5	4.183 9	6.467 5
1 500	198.29	0.001 153 9	0.130 56	0.131 71	842.83	1 750.6	2 593.4	844.56	1 946.4	2 790.0	2.314 3	4.128 6	6.443 0
1 750	205.73	0.001 165 7	0.112 27	0.113 43	876.13	1 720.6	2 596.7	878.17	1 917.0	2 795.2	2.384 5	4.003 2	6.387 7
2 000	212.38	0.001 176 7	0.098 408	0.099 585	906.14	1 692.0	2 599.1	908.50	1 889.8	2 798.3	2.446 8	3.892 3	6.339 0
2 250	218.41	0.001 187 3	0.087 528	0.088 715	933.57	1 667.3	2 600.9	936.24	1 864.2	2 800.5	2.502 9	3.792 5	6.295 4
2 500	223.95	0.001 197 4	0.078 752	0.079 949	958.91	1 643.1	2 602.1	961.91	1 840.0	2 801.9	2.554 3	3.701 5	6.255 8
2 750	229.08	0.001 207 2	0.071 517	0.072 725	982.53	1 620.3	2 602.8	985.85	1 816.9	2 802.8	2.601 6	3.617 8	6.219 4
3 000	233.85	0.001 216 7	0.065 448	0.066 664	1 004.7	1 598.5	2 603.2	1 008.3	1 794.8	2 803.2	2.645 5	3.540 0	6.185 6
3 250	238.33	0.001 225 9	0.060 279	0.061 505	1 025.6	1 577.6	2 603.2	1 029.6	1 773.5	2 803.1	2.686 7	3.467 3	6.154 0
3 500	242.56	0.001 235 0	0.055 823	0.057 058	1 045.5	1 557.5	2 602.9	1 049.8	1 752.8	2 802.6	2.725 4	3.398 9	6.124 3

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.2: Liquid Water/Water Vapour (Pressure-indexed)

P	T_{sat}	v [m^3/kg]			u [kJ/kg]			h [kJ/kg]			s [kJ/(kgK)]		
[kPa]	[°C]	v_f	v_{fg}	v_g	u_f †	u_{fg}	u_g †	h_f †	h_{fg}	h_g †	s_f †	s_{fg}	s_g †
4 000	250.35	0.001 252 6	0.048 524	0.049 776	1 082.5	1 519.2	2 601.7	1 087.5	1 713.3	2 800.8	2.796 8	3.272 8	6.069 6
5 000	263.94	0.001 286 4	0.038 159	0.039 446	1 148.2	1 448.8	2 596.0	1 154.6	1 639.6	2 794.2	2.921 0	3.052 7	5.973 7
6 000	275.58	0.001 319 3	0.031 129	0.032 448	1 206.0	1 383.9	2 589.9	1 213.9	1 570.7	2 784.6	3.027 8	2.862 3	5.890 1
7 000	285.83	0.001 351 9	0.026 027	0.027 378	1 258.2	1 322.8	2 580.0	1 267.7	1 504.0	2 772.6	3.122 4	2.692 4	5.814 8
8 000	295.01	0.001 384 7	0.022 141	0.023 526	1 306.2	1 264.2	2 570.5	1 317.3	1 441.4	2 758.7	3.208 1	2.536 9	5.745 0
9 000	303.34	0.001 418 1	0.019 072	0.020 490	1 351.1	1 207.4	2 558.5	1 363.9	1 379.1	2 742.9	3.287 0	2.392 2	5.679 1
10 000	310.00	0.001 452 6	0.016 577	0.018 030	1 393.5	1 151.7	2 545.2	1 408.1	1 317.4	2 725.5	3.360 6	2.255 3	5.616 0
11 000	318.08	0.001 488 5	0.014 501	0.015 990	1 434.1	1 096.4	2 530.5	1 450.4	1 255.9	2 706.3	3.430 3	2.124 2	5.554 5
12 000	324.68	0.001 526 3	0.012 738	0.014 264	1 473.1	1 041.1	2 514.3	1 491.5	1 193.0	2 685.4	3.496 7	1.997 2	5.493 9
13 000	330.85	0.001 566 5	0.011 214	0.012 780	1 511.1	985.39	2 496.5	1 531.5	1 131.2	2 662.7	3.560 8	1.872 8	5.433 6
14 000	336.67	0.001 609 7	0.009 875 4	0.011 485	1 548.4	928.64	2 477.1	1 570.0	1 066.9	2 637.9	3.623 2	1.749 5	5.372 7
15 000	342.16	0.001 657 0	0.008 681 4	0.010 338	1 585.3	870.28	2 455.6	1 610.2	1 000.5	2 610.7	3.684 6	1.626 0	5.310 6
16 000	347.35	0.001 709 4	0.007 599 4	0.009 308 8	1 622.3	809.51	2 431.8	1 649.7	931.10	2 580.8	3.745 7	1.500 6	5.246 3
17 000	352.29	0.001 769 3	0.006 601 7	0.008 370 9	1 659.9	745.24	2 405.2	1 690.0	857.47	2 547.5	3.807 7	1.371 0	5.178 7
18 000	356.99	0.001 839 8	0.005 661 9	0.007 501 7	1 698.0	675.83	2 374.8	1 732.1	777.74	2 509.8	3.871 8	1.234 2	5.106 1
19 000	361.47	0.001 926 8	0.004 750 5	0.006 677 3	1 740.5	598.59	2 339.1	1 777.2	688.85	2 466.0	3.940 1	1.085 5	5.025 6
20 000	365.75	0.002 040 0	0.003 825 2	0.005 865 2	1 786.4	508.63	2 295.0	1 827.2	585.13	2 412.3	4.015 6	0.915 85	4.931 4
21 000	369.83	0.002 205 5	0.002 790 6	0.004 996 1	1 841.2	392.43	2 233.7	1 887.6	451.04	2 338.6	4.106 4	0.701 48	4.807 9
22 000	373.71	0.002 704 4	0.000 943 1	0.003 647 5	1 951.8	140.00	2 092.8	2 011.3	161.75	2 173.1	4.294 5	0.250 05	4.544 6
22 064	373.95	0.003 105 6	0	0.003 105 6	2 015.7	0	2 015.7	2 084.3	0	2 084.3	4.407 0	0	4.407 0

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m³/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m³/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m³/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 10\,\text{kPa}$ (45.81 °C)				$P = 50\,\text{kPa}$ (81.32 °C)				$P = 100\,\text{kPa}$ (99.61 °C)			
Sat.	14.670	2 437.2	2 583.9	8.148 8	3.240 0	2 483.2	2 645.2	7.593 0	1.693 9	2 505.6	2 674.9	7.358 8
50	14.867	2 443.3	2 591.0	8.174 1	—	—	—	—	—	—	—	—
100	17.196	2 515.5	2 687.5	8.448 9	3.418 7	2 511.5	2 682.4	7.695 3	1.695 9	2 506.2	2 675.8	7.361 0
150	19.513	2 587.9	2 783.0	8.689 2	3.889 7	2 585.7	2 780.2	7.941 3	1.936 7	2 582.9	2 776.6	7.614 8
200	21.826	2 661.3	2 879.6	8.904 9	4.356 2	2 659.0	2 877.8	8.159 2	2.172 4	2 658.2	2 875.5	7.835 6
250	24.136	2 736.1	2 977.4	9.101 5	4.820 6	2 735.1	2 976.1	8.356 8	2.406 2	2 733.9	2 974.5	8.034 6
300	26.446	2 812.3	3 076.7	9.282 7	5.284 0	2 811.6	3 075.8	8.538 6	2.638 8	2 810.6	3 074.5	8.217 2
350	28.755	2 890.0	3 177.5	9.451 3	5.746 9	2 889.4	3 176.8	8.707 6	2.871 0	2 888.7	3 175.8	8.386 6
400	31.063	2 969.3	3 279.9	9.609 4	6.209 4	2 968.9	3 279.3	8.865 9	3.102 7	2 968.3	3 278.6	8.545 2
450	33.371	3 050.3	3 383.0	9.758 4	6.671 7	3 049.9	3 383.5	9.015 1	3.334 2	3 049.4	3 382.8	8.694 6
500	35.680	3 132.9	3 489.7	9.899 8	7.133 8	3 132.6	3 489.3	9.156 6	3.565 5	3 132.2	3 488.7	8.836 1
550	37.988	3 217.2	3 597.1	10.034	7.595 7	3 216.0	3 596.8	9.291 3	3.796 8	3 216.6	3 596.3	8.970 9
600	40.296	3 303.3	3 706.3	10.163	8.057 6	3 303.1	3 705.0	9.420 1	4.027 9	3 302.8	3 705.6	9.099 8
650	42.603	3 391.2	3 817.2	10.287	8.519 5	3 390.0	3 816.9	9.543 6	4.259 0	3 390.7	3 816.6	9.223 4
700	44.911	3 480.8	3 929.9	10.406	8.981 2	3 480.6	3 929.7	9.662 5	4.490 0	3 480.4	3 929.4	9.342 4
750	47.219	3 572.2	4 044.4	10.520	9.443 0	3 572.0	4 044.2	9.777 3	4.720 9	3 571.8	4 043.9	9.457 2
800	49.527	3 665.3	4 160.6	10.631	9.904 7	3 665.2	4 160.4	9.888 2	4.951 9	3 665.0	4 160.2	9.568 1
850	51.835	3 760.3	4 278.6	10.739	10.366	3 760.1	4 278.5	9.995 7	5.182 8	3 759.0	4 278.2	9.675 7
900	54.142	3 856.9	4 398.3	10.843	10.828	3 856.8	4 398.2	10.100	5.413 7	3 856.6	4 398.0	9.780 0
950	56.450	3 955.2	4 519.7	10.944	11.290	3 955.1	4 519.6	10.201	5.644 6	3 954.0	4 519.5	9.881 3
1000	58.758	4 055.2	4 642.8	11.043	11.751	4 055.1	4 642.7	10.300	5.875 4	4 055.0	4 642.6	9.980 0
1050	61.065	4 156.8	4 767.5	11.139	12.213	4 156.8	4 767.4	10.396	6.106 3	4 156.6	4 767.3	10.076
1100	63.373	4 260.0	4 893.7	11.233	12.674	4 259.9	4 893.7	10.490	6.337 1	4 259.8	4 893.5	10.170
1150	65.681	4 364.7	5 021.5	11.324	13.136	4 364.6	5 021.4	10.581	6.568 0	4 364.5	5 021.3	10.261
1200	67.988	4 470.9	5 150.7	11.413	13.598	4 470.8	5 150.7	10.670	6.798 8	4 470.7	5 150.6	10.350
1250	70.296	4 578.4	5 281.4	11.500	14.059	4 578.4	5 281.3	10.758	7.029 6	4 578.3	5 281.2	10.438
1300	72.604	4 687.4	5 413.4	11.586	14.521	4 687.3	5 413.3	10.843	7.260 4	4 687.2	5 413.2	10.523

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 200\,\text{kPa}$ (120.21 °C)				$P = 300\,\text{kPa}$ (133.52 °C)				$P = 400\,\text{kPa}$ (143.61 °C)			
Sat.	0.885 68	2 529.1	2 706.2	7.126 9	0.605 76	2 543.2	2 724.9	6.991 6	0.462 38	2 553.1	2 738.1	6.895 5
150	0.959 86	2 577.1	2 769.1	7.281 0	0.634 01	2 570.0	2 761.2	7.079 1	0.470 88	2 564.4	2 752.8	6.930 6
200	1.080 5	2 654.6	2 870.7	7.508 1	0.716 42	2 650.0	2 865.9	7.313 1	0.534 33	2 647.2	2 860.9	7.172 3
250	1.198 9	2 731.4	2 971.2	7.710 0	0.796 44	2 728.9	2 967.9	7.518 0	0.595 20	2 726.4	2 964.5	7.380 4
300	1.316 2	2 808.8	3 072.1	7.894 1	0.875 34	2 806.0	3 069.6	7.703 7	0.654 89	2 805.1	3 067.1	7.567 7
350	1.433 0	2 887.3	3 173.9	8.064 4	0.953 63	2 885.9	3 171.0	7.875 0	0.713 96	2 884.4	3 170.0	7.739 9
400	1.549 3	2 967.1	3 277.0	8.223 6	1.031 5	2 966.0	3 275.5	8.034 7	0.772 64	2 964.9	3 273.9	7.900 2
450	1.665 5	3 048.5	3 381.6	8.373 4	1.109 2	3 047.5	3 380.3	8.184 9	0.831 09	3 046.6	3 379.0	8.050 8
500	1.781 4	3 131.4	3 487.7	8.515 2	1.186 7	3 130.6	3 486.6	8.327 1	0.889 36	3 129.8	3 485.5	8.193 3
550	1.897 3	3 215.9	3 595.4	8.650 2	1.264 1	3 215.3	3 594.5	8.462 3	0.947 51	3 214.6	3 593.6	8.328 7
600	2.013 0	3 302.2	3 704.8	8.779 2	1.341 4	3 301.6	3 704.0	8.591 4	1.005 6	3 301.0	3 703.2	8.458 0
650	2.128 7	3 390.2	3 815.9	8.903 0	1.418 6	3 389.7	3 815.3	8.715 3	1.063 6	3 389.1	3 814.6	8.582 0
700	2.244 3	3 479.9	3 928.8	9.022 0	1.495 8	3 479.5	3 928.2	8.834 4	1.121 5	3 479.0	3 927.6	8.701 2
750	2.359 9	3 571.4	4 043.4	9.136 9	1.572 9	3 570.0	4 042.9	8.949 4	1.179 4	3 570.6	4 042.4	8.816 2
800	2.475 5	3 664.7	4 159.8	9.247 9	1.650 0	3 664.3	4 159.3	9.060 4	1.237 3	3 663.9	4 158.8	8.927 3
850	2.591 0	3 759.6	4 277.8	9.355 5	1.727 1	3 759.3	4 277.4	9.168 0	1.295 1	3 758.0	4 277.0	9.035 0
900	2.706 6	3 856.3	4 397.6	9.459 8	1.804 2	3 856.0	4 397.3	9.272 4	1.353 0	3 855.7	4 396.9	9.139 4
950	2.822 1	3 954.7	4 519.1	9.561 2	1.881 2	3 954.4	4 518.8	9.373 9	1.410 8	3 954.2	4 518.5	9.240 9
1000	2.937 5	4 054.8	4 642.3	9.659 9	1.958 2	4 054.5	4 641.0	9.472 6	1.468 6	4 054.3	4 641.7	9.339 6
1050	3.053 0	4 156.4	4 767.0	9.756 0	2.035 2	4 156.2	4 766.7	9.568 7	1.526 4	4 155.9	4 766.5	9.435 7
1100	3.168 5	4 259.6	4 893.3	9.849 7	2.112 2	4 259.4	4 893.1	9.662 4	1.584 1	4 259.2	4 892.8	9.529 5
1150	3.283 9	4 364.3	5 021.1	9.941 1	2.189 2	4 364.1	5 020.9	9.753 8	1.641 9	4 363.9	5 020.7	9.620 9
1200	3.399 4	4 470.5	5 150.4	10.030	2.266 2	4 470.3	5 150.2	9.843 1	1.699 7	4 470.1	5 149.0	9.710 2
1250	3.514 8	4 578.1	5 281.1	10.118	2.343 2	4 577.9	5 280.9	9.930 3	1.757 4	4 577.8	5 280.7	9.797 5
1300	3.630 2	4 687.0	5 413.1	10.203	2.420 2	4 686.9	5 412.9	10.016	1.815 2	4 686.7	5 412.8	9.882 8

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 500$ kPa (151.83 °C)				$P = 600$ kPa (158.83 °C)				$P = 800$ kPa (170.41 °C)			
Sat.	0.374 81	2 560.7	2 748.1	6.820 7	0.315 58	2 566.8	2 756.1	6.759 2	0.240 34	2 576.0	2 768.3	6.661 6
200	0.425 03	2 643.3	2 855.8	7.061 0	0.352 12	2 639.3	2 850.6	6.968 3	0.260 88	2 631.0	2 839.7	6.817 6
250	0.474 43	2 723.8	2 961.0	7.272 4	0.393 90	2 721.2	2 957.6	7.183 2	0.293 20	2 715.9	2 950.4	7.040 1
300	0.522 61	2 803.2	3 064.6	7.461 4	0.434 42	2 801.4	3 062.0	7.374 0	0.324 16	2 797.5	3 056.9	7.234 5
350	0.570 15	2 883.0	3 168.1	7.634 6	0.474 27	2 881.6	3 166.1	7.548 1	0.354 42	2 878.6	3 162.2	7.410 6
400	0.617 30	2 963.7	3 272.3	7.795 5	0.513 74	2 962.5	3 270.8	7.709 7	0.384 28	2 960.2	3 267.6	7.573 4
450	0.664 21	3 045.6	3 377.7	7.946 5	0.552 96	3 044.7	3 376.5	7.861 1	0.413 89	3 042.8	3 373.9	7.725 7
500	0.710 94	3 128.0	3 484.5	8.089 2	0.592 00	3 128.2	3 483.4	8.004 1	0.443 32	3 126.6	3 481.3	7.869 2
550	0.757 56	3 213.9	3 592.7	8.224 9	0.630 93	3 213.2	3 591.8	8.139 9	0.472 63	3 211.9	3 589.0	8.005 4
600	0.804 09	3 300.4	3 702.5	8.354 3	0.669 76	3 299.8	3 701.7	8.269 5	0.501 85	3 298.7	3 700.1	8.135 4
650	0.850 55	3 388.6	3 813.9	8.478 4	0.708 53	3 388.1	3 813.2	8.393 7	0.531 01	3 387.1	3 811.9	8.259 8
700	0.896 96	3 478.5	3 927.0	8.597 7	0.747 25	3 478.1	3 926.4	8.513 1	0.560 11	3 477.2	3 925.3	8.379 4
750	0.943 32	3 570.2	4 041.8	8.712 8	0.785 92	3 569.8	4 041.3	8.628 3	0.589 17	3 568.0	4 040.3	8.494 7
800	0.989 66	3 663.6	4 158.4	8.824 0	0.824 57	3 663.2	4 157.9	8.739 5	0.618 20	3 662.4	4 157.0	8.606 1
850	1.036 0	3 758.6	4 276.6	8.931 7	0.863 19	3 758.3	4 276.2	8.847 2	0.647 21	3 757.6	4 275.4	8.713 9
900	1.082 3	3 855.4	4 396.6	9.036 2	0.901 78	3 855.1	4 396.2	8.951 8	0.676 19	3 854.5	4 395.5	8.818 5
950	1.128 5	3 953.9	4 518.2	9.137 7	0.940 37	3 953.6	4 517.8	9.053 3	0.705 15	3 953.1	4 517.2	8.920 1
1000	1.174 8	4 054.0	4 641.4	9.236 4	0.978 93	4 053.7	4 641.1	9.152 1	0.734 11	4 053.2	4 640.5	9.018 9
1050	1.221 0	4 155.7	4 766.2	9.332 6	1.017 5	4 155.5	4 765.0	9.248 2	0.763 04	4 155.0	4 765.4	9.115 1
1100	1.267 3	4 258.0	4 892.6	9.426 3	1.056 0	4 258.7	4 892.4	9.342 0	0.791 97	4 258.3	4 891.9	9.208 9
1150	1.313 5	4 363.7	5 020.5	9.517 8	1.094 6	4 363.5	5 020.3	9.433 5	0.820 89	4 363.1	5 019.8	9.300 4
1200	1.359 7	4 469.0	5 149.8	9.607 1	1.133 1	4 469.8	5 149.6	9.522 8	0.849 80	4 469.4	5 149.2	9.389 8
1250	1.405 9	4 577.6	5 280.5	9.694 4	1.171 6	4 577.4	5 280.4	9.610 1	0.878 71	4 577.1	5 280.0	9.477 1
1300	1.452 1	4 686.6	5 412.6	9.779 7	1.210 1	4 686.4	5 412.5	9.695 4	0.907 60	4 686.1	5 412.2	9.562 5

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 1$ MPa (179.88 °C)				$P = 1.2$ MPa (187.96 °C)				$P = 1.4$ MPa (195.04 °C)			
Sat.	0.194 36	2 582.7	2 777.1	6.585 0	0.163 26	2 587.8	2 783.7	6.521 7	0.140 78	2 591.8	2 788.8	6.467 5
200	0.206 02	2 622.2	2 828.3	6.695 5	0.169 34	2 612.9	2 816.1	6.590 9	0.143 03	2 602.7	2 802.0	6.497 5
250	0.232 75	2 710.4	2 943.1	6.926 5	0.192 41	2 704.7	2 935.6	6.831 3	0.163 56	2 698.9	2 927.9	6.748 8
300	0.257 99	2 793.6	3 051.6	7.124 6	0.213 86	2 789.7	3 046.3	7.033 5	0.182 32	2 785.7	3 040.9	6.955 2
350	0.282 50	2 875.7	3 158.2	7.302 9	0.234 55	2 872.7	3 154.2	7.213 9	0.200 29	2 869.7	3 150.1	7.137 9
400	0.306 61	2 957.9	3 264.5	7.466 9	0.254 82	2 955.5	3 261.3	7.379 3	0.217 82	2 953.1	3 258.1	7.304 6
450	0.330 45	3 040.9	3 371.3	7.620 0	0.274 82	3 038.9	3 368.7	7.533 2	0.235 08	3 036.0	3 366.1	7.459 4
500	0.354 11	3 124.0	3 479.1	7.764 1	0.294 64	3 123.4	3 476.9	7.677 9	0.252 16	3 121.8	3 474.8	7.604 7
550	0.377 66	3 210.5	3 588.1	7.900 8	0.314 34	3 209.1	3 586.3	7.815 0	0.269 11	3 207.7	3 584.5	7.742 2
600	0.401 11	3 297.5	3 698.6	8.031 0	0.333 94	3 296.3	3 697.0	7.945 5	0.285 97	3 295.1	3 695.4	7.873 0
650	0.424 49	3 386.0	3 810.5	8.155 7	0.353 48	3 384.0	3 809.2	8.070 4	0.302 76	3 383.0	3 807.8	7.998 2
700	0.447 83	3 476.2	3 924.1	8.275 5	0.372 97	3 475.3	3 922.9	8.190 4	0.319 51	3 474.4	3 921.7	8.118 3
750	0.471 12	3 568.1	4 039.3	8.390 9	0.392 42	3 567.3	4 038.2	8.306 0	0.336 21	3 566.5	4 037.2	8.234 0
800	0.494 38	3 661.7	4 156.1	8.502 4	0.411 84	3 660.0	4 155.2	8.417 6	0.352 87	3 660.2	4 154.3	8.345 7
850	0.517 62	3 756.0	4 274.6	8.610 3	0.431 23	3 756.3	4 273.8	8.525 6	0.369 52	3 755.6	4 272.0	8.453 8
900	0.540 83	3 853.9	4 394.8	8.715 0	0.450 59	3 853.3	4 394.0	8.630 3	0.386 14	3 852.7	4 393.3	8.558 7
950	0.564 03	3 952.5	4 516.5	8.816 6	0.469 94	3 951.0	4 515.9	8.732 0	0.402 74	3 951.4	4 515.2	8.660 4
1000	0.587 21	4 052.7	4 639.9	8.915 5	0.489 28	4 052.2	4 639.4	8.831 0	0.419 33	4 051.7	4 638.8	8.759 4
1050	0.610 38	4 154.5	4 764.9	9.011 8	0.508 60	4 154.1	4 764.4	8.927 3	0.435 91	4 153.6	4 763.9	8.855 8
1100	0.633 54	4 257.9	4 891.4	9.105 6	0.527 92	4 257.5	4 890.0	9.021 2	0.452 47	4 257.0	4 890.5	8.949 7
1150	0.656 69	4 362.7	5 019.4	9.197 2	0.547 22	4 362.3	5 018.0	9.112 8	0.469 03	4 361.9	5 018.6	9.041 3
1200	0.679 83	4 469.0	5 148.9	9.286 6	0.566 52	4 468.7	5 148.5	9.202 2	0.485 58	4 468.3	5 148.1	9.130 8
1250	0.702 97	4 576.7	5 279.7	9.373 9	0.585 81	4 576.4	5 279.3	9.289 5	0.502 12	4 576.0	5 278.0	9.218 2
1300	0.726 10	4 685.8	5 411.9	9.459 3	0.605 09	4 685.4	5 411.5	9.374 9	0.518 66	4 685.1	5 411.2	9.303 6

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 1.6$ MPa (201.37 °C)				$P = 1.8$ MPa (207.11 °C)				$P = 2$ MPa (212.38 °C)			
Sat.	0.123 74	2 594.8	2 792.8	6.419 9	0.110 37	2 597.2	2 795.9	6.377 5	0.099 585	2 599.1	2 798.3	6.339 0
250	0.141 90	2 692.9	2 919.9	6.675 3	0.125 02	2 686.7	2 911.7	6.608 7	0.111 50	2 680.2	2 903.2	6.547 5
300	0.158 66	2 781.6	3 035.4	6.886 3	0.140 25	2 777.4	3 029.9	6.824 6	0.125 51	2 773.2	3 024.2	6.768 4
350	0.174 59	2 866.6	3 145.0	7.071 3	0.154 60	2 863.6	3 141.8	7.012 0	0.138 60	2 860.5	3 137.7	6.958 3
400	0.190 07	2 950.7	3 254.9	7.239 4	0.168 49	2 948.3	3 251.6	7.181 4	0.151 21	2 945.9	3 248.3	7.129 2
450	0.205 27	3 035.0	3 363.5	7.395 0	0.182 09	3 033.1	3 360.9	7.338 0	0.163 54	3 031.1	3 358.2	7.286 6
500	0.220 29	3 120.1	3 472.6	7.540 9	0.195 51	3 118.5	3 470.4	7.484 5	0.175 68	3 116.9	3 468.2	7.433 7
550	0.235 19	3 206.3	3 582.6	7.678 8	0.208 80	3 204.0	3 580.8	7.622 8	0.187 70	3 203.6	3 578.0	7.572 5
600	0.249 99	3 293.9	3 693.9	7.810 0	0.222 00	3 292.7	3 692.3	7.754 3	0.199 61	3 291.5	3 690.7	7.704 3
650	0.264 72	3 382.9	3 806.5	7.935 4	0.235 14	3 381.9	3 805.1	7.879 9	0.211 46	3 380.8	3 803.8	7.830 2
700	0.279 40	3 473.5	3 920.5	8.055 7	0.248 21	3 472.6	3 919.4	8.000 4	0.223 26	3 471.6	3 918.2	7.950 9
750	0.294 04	3 565.7	4 036.1	8.171 6	0.261 25	3 564.9	4 035.1	8.116 4	0.235 02	3 564.0	4 034.1	8.067 0
800	0.308 65	3 659.5	4 153.3	8.283 4	0.274 26	3 658.8	4 152.4	8.228 4	0.246 74	3 658.0	4 151.5	8.179 0
850	0.323 23	3 754.0	4 272.2	8.391 6	0.287 24	3 754.3	4 271.3	8.336 7	0.258 44	3 753.6	4 270.5	8.287 4
900	0.337 80	3 852.1	4 392.6	8.496 5	0.300 20	3 851.5	4 391.9	8.441 6	0.270 12	3 850.9	4 391.1	8.392 5
950	0.352 34	3 950.9	4 514.6	8.598 4	0.313 14	3 950.3	4 513.0	8.543 5	0.281 78	3 949.8	4 513.3	8.494 5
1000	0.366 87	4 051.2	4 638.2	8.697 4	0.326 06	4 050.7	4 637.6	8.642 6	0.293 42	4 050.2	4 637.0	8.593 6
1050	0.381 38	4 153.1	4 763.4	8.793 8	0.338 98	4 152.7	4 762.8	8.739 1	0.305 05	4 152.2	4 762.3	8.690 1
1100	0.395 89	4 256.6	4 890.0	8.887 8	0.351 88	4 256.2	4 889.5	8.833 1	0.316 67	4 255.7	4 889.1	8.784 2
1150	0.410 38	4 361.5	5 018.2	8.979 4	0.364 77	4 361.1	5 017.7	8.924 8	0.328 28	4 360.7	5 017.3	8.875 9
1200	0.424 87	4 467.9	5 147.7	9.068 9	0.377 66	4 467.5	5 147.3	9.014 3	0.339 89	4 467.2	5 146.0	8.965 4
1250	0.439 36	4 575.7	5 278.7	9.156 3	0.390 54	4 575.3	5 278.3	9.101 7	0.351 49	4 574.0	5 277.0	9.052 9
1300	0.453 83	4 684.8	5 410.9	9.241 7	0.403 41	4 684.5	5 410.6	9.187 2	0.363 08	4 684.1	5 410.3	9.138 4

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m³/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m³/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m³/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 2.5\,\text{MPa}$ (223.95 °C)				$P = 3\,\text{MPa}$ (233.85 °C)				$P = 4\,\text{MPa}$ (250.35 °C)			
Sat.	0.079 949	2 602.1	2 801.9	6.255 8	0.066 664	2 603.2	2 803.2	6.185 6	0.049 776	2 601.7	2 800.8	6.069 6
250	0.087 053	2 663.3	2 880.9	6.410 7	0.070 627	2 644.7	2 856.5	6.289 3	—	—	—	—
300	0.098 937	2 762.2	3 009.6	6.645 9	0.081 179	2 750.8	2 994.3	6.541 2	0.058 870	2 726.2	2 961.7	6.363 9
350	0.109 79	2 852.5	3 126.0	6.842 4	0.090 556	2 844.4	3 116.1	6.744 9	0.066 473	2 827.4	3 093.3	6.584 3
400	0.120 12	2 939.8	3 240.1	7.017 0	0.099 379	2 933.5	3 231.7	6.923 4	0.073 431	2 920.7	3 214.5	6.771 4
450	0.130 15	3 026.2	3 351.6	7.176 7	0.107 89	3 021.2	3 344.8	7.085 6	0.080 043	3 011.0	3 331.2	6.938 6
500	0.139 99	3 112.8	3 462.7	7.325 4	0.116 20	3 108.6	3 457.2	7.235 9	0.086 442	3 100.3	3 446.0	7.092 2
550	0.149 70	3 200.1	3 574.3	7.465 3	0.124 37	3 196.6	3 569.7	7.376 8	0.092 700	3 189.5	3 560.3	7.235 5
600	0.159 31	3 288.5	3 686.8	7.597 9	0.132 45	3 285.5	3 682.8	7.510 3	0.098 859	3 279.4	3 674.9	7.370 5
650	0.168 86	3 378.2	3 800.4	7.724 3	0.140 45	3 375.6	3 796.9	7.637 3	0.104 94	3 370.3	3 790.1	7.498 8
700	0.178 35	3 469.3	3 915.2	7.845 5	0.148 41	3 467.0	3 912.2	7.759 0	0.110 98	3 462.4	3 906.3	7.621 4
750	0.187 80	3 561.0	4 031.5	7.962 0	0.156 32	3 559.9	4 028.9	7.875 8	0.116 97	3 555.8	4 023.6	7.739 0
800	0.197 21	3 656.2	4 149.2	8.074 3	0.164 20	3 654.3	4 146.9	7.988 5	0.122 92	3 650.6	4 142.3	7.852 3
850	0.206 60	3 751.0	4 268.5	8.183 0	0.172 05	3 750.3	4 266.5	8.097 3	0.128 85	3 746.0	4 262.4	7.961 6
900	0.215 97	3 849.4	4 389.3	8.288 2	0.179 88	3 847.9	4 387.5	8.202 8	0.134 76	3 844.8	4 383.9	8.067 4
950	0.225 32	3 948.4	4 511.7	8.390 4	0.187 69	3 946.0	4 510.1	8.305 1	0.140 65	3 944.2	4 506.8	8.170 1
1000	0.234 66	4 048.9	4 635.6	8.489 6	0.195 49	4 047.7	4 634.1	8.404 5	0.146 52	4 045.1	4 631.2	8.269 7
1050	0.243 99	4 151.0	4 761.0	8.586 3	0.203 27	4 149.9	4 759.7	8.501 2	0.152 39	4 147.5	4 757.1	8.366 7
1100	0.253 30	4 254.7	4 887.9	8.680 4	0.211 05	4 253.6	4 886.7	8.595 5	0.158 24	4 251.4	4 884.4	8.461 1
1150	0.262 60	4 359.7	5 016.2	8.772 2	0.218 82	4 358.7	5 015.2	8.687 4	0.164 08	4 356.7	5 013.1	8.553 2
1200	0.271 90	4 466.2	5 145.0	8.861 8	0.226 57	4 465.3	5 145.0	8.777 0	0.169 92	4 463.5	5 143.1	8.643 0
1250	0.281 19	4 574.1	5 277.1	8.949 3	0.234 33	4 573.3	5 276.2	8.864 6	0.175 75	4 571.5	5 274.5	8.730 7
1300	0.290 47	4 683.3	5 409.5	9.034 9	0.242 07	4 682.5	5 408.8	8.950 2	0.181 57	4 680.9	5 407.2	8.816 4

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 5$ MPa (263.94 °C)				$P = 6$ MPa (275.58 °C)				$P = 8$ MPa (295.01 °C)			
Sat.	0.039 446	2 596.0	2 794.2	5.973 7	0.032 448	2 589.9	2 784.6	5.890 1	0.023 526	2 570.5	2 758.7	5.745 0
300	0.045 346	2 698.0	2 925.7	6.211 0	0.036 189	2 668.4	2 885.5	6.070 3	0.024 279	2 592.3	2 786.5	5.793 7
350	0.051 969	2 809.5	3 069.3	6.451 6	0.042 251	2 790.4	3 043.9	6.335 7	0.029 975	2 748.3	2 988.1	6.132 1
400	0.057 837	2 907.5	3 196.7	6.648 3	0.047 419	2 893.7	3 178.2	6.543 2	0.034 344	2 864.6	3 139.4	6.365 8
450	0.063 323	3 000.6	3 317.2	6.821 0	0.052 166	2 989.9	3 302.9	6.721 9	0.038 194	2 967.8	3 273.3	6.557 9
500	0.068 583	3 091.7	3 434.7	6.978 1	0.056 671	3 083.1	3 423.1	6.882 6	0.041 767	3 065.4	3 399.5	6.726 6
550	0.073 694	3 182.4	3 550.9	7.123 7	0.061 021	3 175.2	3 541.3	7.030 7	0.045 172	3 160.5	3 521.8	6.879 9
600	0.078 704	3 273.3	3 666.8	7.260 5	0.065 265	3 267.2	3 658.7	7.169 3	0.048 463	3 254.7	3 642.4	7.022 1
650	0.083 639	3 364.0	3 783.2	7.390 1	0.069 434	3 359.6	3 776.2	7.300 1	0.051 675	3 348.9	3 762.3	7.155 6
700	0.088 518	3 457.7	3 900.3	7.513 6	0.073 545	3 453.0	3 894.3	7.424 6	0.054 828	3 443.6	3 882.2	7.282 1
750	0.093 355	3 551.6	4 018.4	7.632 0	0.077 614	3 547.5	4 013.2	7.543 8	0.057 937	3 539.1	4 002.6	7.402 8
800	0.098 158	3 646.9	4 137.7	7.745 8	0.081 648	3 643.2	4 133.1	7.658 2	0.061 011	3 635.7	4 123.8	7.518 4
850	0.102 93	3 743.6	4 258.3	7.855 6	0.085 655	3 740.3	4 254.2	7.768 5	0.064 057	3 733.5	4 245.0	7.629 7
900	0.107 69	3 841.8	4 380.2	7.961 8	0.089 641	3 838.8	4 376.6	7.875 1	0.067 082	3 832.6	4 369.3	7.737 1
950	0.112 42	3 941.5	4 503.6	8.064 8	0.093 608	3 938.7	4 500.3	7.978 4	0.070 088	3 933.1	4 493.8	7.841 1
1000	0.117 15	4 042.6	4 628.3	8.164 8	0.097 560	4 040.1	4 625.4	8.078 6	0.073 079	4 034.0	4 619.6	7.941 9
1050	0.121 85	4 145.2	4 754.5	8.262 0	0.101 50	4 142.9	4 751.9	8.176 0	0.076 057	4 138.2	4 746.7	8.039 7
1100	0.126 55	4 249.3	4 882.0	8.356 6	0.105 43	4 247.1	4 879.7	8.270 9	0.079 025	4 242.8	4 875.0	8.135 0
1150	0.131 24	4 354.8	5 010.0	8.448 8	0.109 35	4 352.8	5 008.9	8.363 2	0.081 983	4 348.8	5 004.6	8.227 7
1200	0.135 92	4 461.6	5 141.2	8.538 8	0.113 26	4 459.8	5 139.3	8.453 4	0.084 934	4 456.1	5 135.5	8.318 1
1250	0.140 60	4 569.8	5 272.8	8.626 6	0.117 17	4 568.1	5 271.1	8.541 3	0.087 878	4 564.6	5 267.7	8.406 3
1300	0.145 27	4 679.3	5 405.7	8.712 4	0.121 07	4 677.7	5 404.1	8.627 2	0.090 816	4 674.5	5 401.0	8.492 4

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 10$ MPa (311.00 °C)				$P = 15$ MPa (342.16 °C)				$P = 20$ MPa (365.75 °C)			
Sat.	0.018 030	2 545.2	2 725.5	5.616 0	0.010 338	2 455.6	2 610.7	5.310 6	0.005 865 2	2 295.0	2 412.3	4.931 4
350	0.022 440	2 699.6	2 924.0	5.945 9	0.011 481	2 520.9	2 693.1	5.443 7	—	—	—	—
400	0.026 436	2 833.1	3 097.4	6.214 1	0.015 671	2 740.6	2 975.7	5.881 9	0.009 950 3	2 617.9	2 816.9	5.552 5
450	0.029 782	2 944.5	3 242.3	6.421 9	0.018 477	2 880.7	3 157.9	6.143 4	0.012 721	2 807.2	3 061.7	5.904 3
500	0.032 811	3 047.0	3 375.1	6.599 5	0.020 827	2 998.4	3 310.8	6.348 0	0.014 793	2 945.3	3 241.2	6.144 6
550	0.035 654	3 145.4	3 501.0	6.758 5	0.022 945	3 106.2	3 450.4	6.523 0	0.016 571	3 064.7	3 396.1	6.338 9
600	0.038 378	3 241.0	3 625.8	6.904 5	0.024 921	3 209.3	3 583.1	6.679 6	0.018 185	3 175.3	3 539.0	6.507 5
650	0.041 018	3 337.9	3 748.1	7.040 8	0.026 804	3 310.1	3 712.1	6.823 3	0.019 695	3 281.4	3 675.3	6.659 3
700	0.043 597	3 434.0	3 869.0	7.169 3	0.028 621	3 409.8	3 839.1	6.957 2	0.021 133	3 385.1	3 807.8	6.799 0
750	0.046 131	3 530.7	3 991.0	7.291 6	0.030 390	3 509.4	3 965.2	7.083 6	0.022 521	3 487.7	3 938.1	6.929 7
800	0.048 629	3 628.2	4 114.5	7.408 5	0.032 121	3 609.2	4 091.1	7.203 7	0.023 869	3 590.1	4 067.5	7.053 1
850	0.051 099	3 726.8	4 237.8	7.520 7	0.033 823	3 709.8	4 217.1	7.318 5	0.025 188	3 692.6	4 196.4	7.170 5
900	0.053 547	3 826.5	4 362.0	7.629 0	0.035 503	3 811.2	4 343.7	7.428 8	0.026 483	3 795.7	4 325.4	7.282 9
950	0.055 976	3 927.5	4 487.3	7.733 5	0.037 163	3 913.6	4 471.0	7.535 0	0.027 760	3 899.5	4 454.7	7.390 9
1000	0.058 390	4 029.9	4 613.8	7.834 9	0.038 808	4 017.1	4 599.2	7.637 8	0.029 020	4 004.3	4 584.7	7.495 0
1050	0.060 792	4 133.5	4 741.4	7.933 2	0.040 441	4 121.8	4 728.4	7.737 3	0.030 268	4 110.0	4 715.4	7.595 7
1100	0.063 183	4 238.5	4 870.3	8.028 8	0.042 062	4 227.7	4 858.6	7.833 9	0.031 504	4 216.9	4 846.9	7.693 3
1150	0.065 564	4 344.8	5 000.4	8.121 9	0.043 674	4 334.8	4 989.9	7.927 8	0.032 732	4 324.8	4 979.4	7.788 0
1200	0.067 938	4 452.3	5 131.7	8.212 6	0.045 279	4 443.1	5 122.3	8.019 2	0.033 952	4 433.8	5 112.8	7.880 2
1250	0.070 305	4 561.2	5 264.2	8.301 0	0.046 877	4 552.6	5 255.7	8.108 3	0.035 164	4 543.0	5 247.2	7.969 9
1300	0.072 667	4 671.3	5 397.9	8.387 4	0.048 468	4 663.2	5 390.3	8.195 2	0.036 371	4 655.2	5 382.6	8.057 4

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$

Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.4: Superheated Water Vapour

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 30$ MPa				$P = 40$ MPa			
375	0.001 791 6	1 738.1	1 791.8	3.931 3	0.001 641 2	1 676.0	1 742.6	3.829 0
425	0.005 298 6	2 452.8	2 611.8	5.147 3	0.002 537 5	2 097.5	2 199.0	4.504 4
500	0.008 690 4	2 824.0	3 084.7	5.795 6	0.005 623 1	2 681.6	2 906.5	5.474 4
550	0.010 175	2 974.5	3 279.7	6.040 2	0.006 984 7	2 875.0	3 154.4	5.785 7
600	0.011 445	3 103.4	3 446.7	6.237 3	0.008 089 1	3 026.8	3 350.4	6.017 0
650	0.012 589	3 221.7	3 599.4	6.407 4	0.009 053 2	3 159.5	3 521.6	6.207 8
700	0.013 653	3 334.3	3 743.9	6.559 8	0.009 929 7	3 281.0	3 679.1	6.374 0
750	0.014 661	3 443.6	3 883.4	6.699 7	0.010 747	3 398.6	3 828.4	6.523 6
800	0.015 628	3 551.2	4 020.0	6.830 0	0.011 521	3 511.8	3 972.6	6.661 2
850	0.016 563	3 657.0	4 154.9	6.952 9	0.012 263	3 623.1	4 113.6	6.789 6
900	0.017 473	3 764.6	4 288.8	7.069 5	0.012 980	3 733.3	4 252.5	6.910 6
950	0.018 364	3 871.4	4 422.3	7.181 0	0.013 678	3 843.1	4 390.2	7.025 6
1000	0.019 240	3 978.6	4 555.8	7.288 0	0.014 360	3 952.9	4 527.3	7.135 5
1050	0.020 102	4 086.5	4 689.6	7.391 0	0.015 028	4 063.0	4 664.2	7.240 9
1100	0.020 953	4 195.2	4 823.8	7.490 6	0.015 686	4 173.7	4 801.1	7.342 5
1150	0.021 796	4 304.8	4 958.7	7.587 1	0.016 335	4 284.9	4 938.3	7.440 6
1200	0.022 630	4 415.3	5 094.2	7.680 7	0.016 976	4 396.9	5 075.9	7.535 7
1250	0.023 458	4 526.8	5 230.5	7.771 6	0.017 610	4 509.7	5 214.1	7.627 9
1300	0.024 279	4 639.2	5 367.6	7.860 2	0.018 239	4 623.3	5 352.8	7.717 5

† Reference states: $u_f(0.01\,^\circ\text{C}) \equiv 0$, $s_f(0.01\,^\circ\text{C}) \equiv 0$ Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.3: Subcooled/Compressed Liquid Water

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 500$ kPa (151.83 °C)				$P = 2$ MPa (212.38 °C)			
0	0.001 000 0	0.009	0.509	0.000 03	0.000 999 2	0.036	2.034	0.000 13
20	0.001 001 6	83.882	84.382	0.296 38	0.001 000 9	83.791	85.793	0.296 07
40	0.001 007 7	167.47	167.97	0.572 21	0.001 007 0	167.28	169.30	0.571 63
60	0.001 016 9	251.08	251.58	0.831 04	0.001 016 2	250.81	252.84	0.830 24
80	0.001 028 8	334.86	335.37	1.075 3	0.001 028 1	334.51	336.57	1.074 3
100	0.001 043 3	418.94	419.47	1.306 9	0.001 042 5	418.51	420.59	1.305 7
120	0.001 060 2	503.49	504.02	1.527 6	0.001 059 3	502.96	505.08	1.526 3
140	0.001 079 7	588.71	589.25	1.739 1	0.001 078 7	588.07	590.22	1.737 5
160	—	—	—	—	0.001 101 0	674.08	676.28	1.940 9
180	—	—	—	—	0.001 126 6	761.30	763.56	2.137 9
200	—	—	—	—	0.001 156 1	850.14	852.45	2.329 8
Sat.	0.001 092 5	639.54	640.09	1.860 4	0.001 176 7	906.14	908.50	2.446 8

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$ Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.3: Subcooled/Compressed Liquid Water

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 5$ MPa (263.94 °C)				$P = 10$ MPa (311.00 °C)			
0	0.000 997 7	0.086	5.074	0.000 29	0.000 995 2	0.159	10.111	0.000 49
20	0.000 999 6	83.609	88.607	0.295 43	0.000 997 3	83.308	93.281	0.294 35
40	0.001 005 7	166.92	171.95	0.570 46	0.001 003 5	166.33	176.36	0.568 51
60	0.001 014 9	250.29	255.36	0.828 65	0.001 012 7	249.42	259.55	0.826 02
80	0.001 026 7	333.82	338.95	1.072 3	0.001 024 4	332.69	342.94	1.069 1
100	0.001 041 0	417.64	422.85	1.303 4	0.001 038 5	416.23	426.62	1.299 6
120	0.001 057 6	501.90	507.19	1.523 6	0.001 054 9	500.18	510.73	1.519 1
140	0.001 076 9	586.79	592.18	1.734 4	0.001 073 8	584.71	595.45	1.729 3
160	0.001 098 8	672.55	678.04	1.937 4	0.001 095 4	670.06	681.01	1.931 5
180	0.001 124 0	759.46	765.08	2.133 8	0.001 120 0	756.48	767.68	2.127 1
200	0.001 153 1	847.91	853.68	2.325 1	0.001 148 2	844.31	855.80	2.317 4
220	0.001 186 8	938.39	944.32	2.512 7	0.001 180 9	934.00	945.81	2.503 7
240	0.001 226 8	1 031.6	1 037.7	2.698 3	0.001 219 2	1 026.1	1 038.3	2.687 6
260	0.001 275 5	1 128.5	1 134.9	2.884 1	0.001 265 3	1 121.6	1 134.3	2.871 0
280	—	—	—	—	0.001 322 6	1 221.8	1 235.0	3.056 5
300	—	—	—	—	0.001 398 0	1 329.4	1 343.3	3.248 8
Sat.	0.001 286 4	1 148.2	1 154.6	2.921 0	0.001 452 6	1 393.5	1 408.1	3.360 6

† Reference states: $u_f(0.01\,°C) \equiv 0$, $s_f(0.01\,°C) \equiv 0$ Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.3: Subcooled/Compressed Liquid Water

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 15$ MPa (342.16 °C)				$P = 20$ MPa (365.75 °C)			
0	0.000 992 8	0.219	15.110	0.000 60	0.000 990 4	0.267	20.074	0.000 62
20	0.000 995 1	83.007	97.934	0.293 23	0.000 992 9	82.708	102.57	0.292 07
40	0.001 001 3	165.75	180.77	0.566 56	0.000 999 2	165.17	185.16	0.564 61
60	0.001 010 5	248.58	263.74	0.823 40	0.001 008 4	247.75	267.92	0.820 80
80	0.001 022 1	331.59	346.92	1.065 9	0.001 019 9	330.50	350.90	1.062 7
100	0.001 036 1	414.85	430.39	1.295 8	0.001 033 7	413.50	434.17	1.292 0
120	0.001 052 2	498.49	514.28	1.514 8	0.001 049 6	496.85	517.84	1.510 5
140	0.001 070 8	582.69	598.75	1.724 3	0.001 067 9	580.71	602.07	1.719 4
160	0.001 092 0	667.63	684.01	1.925 9	0.001 088 6	665.27	687.05	1.920 3
180	0.001 116 0	753.58	770.32	2.120 6	0.001 112 2	750.77	773.02	2.114 3
200	0.001 143 5	840.84	857.99	2.310 0	0.001 139 0	837.49	860.27	2.302 7
220	0.001 175 2	929.80	947.43	2.495 1	0.001 169 7	925.77	949.16	2.486 7
240	0.001 212 1	1 020.0	1 039.2	2.677 4	0.001 205 3	1 016.1	1 040.2	2.667 6
260	0.001 256 0	1 115.1	1 133.0	2.858 6	0.001 247 2	1 109.0	1 133.0	2.846 9
280	0.001 309 6	1 213.4	1 232.0	3.040 9	0.001 297 8	1 205.5	1 231.5	3.026 5
300	0.001 378 3	1 317.6	1 338.3	3.227 9	0.001 361 1	1 307.1	1 334.4	3.209 1
320	0.001 473 3	1 431.9	1 454.0	3.426 3	0.001 445 0	1 416.6	1 445.5	3.399 6
340	0.001 631 1	1 567.9	1 592.4	3.655 5	0.001 569 3	1 540.2	1 571.6	3.608 6
360	—	—	—	—	0.001 824 8	1 703.6	1 740.1	3.878 7
Sat.	0.001 657 0	1 585.3	1 610.2	3.684 6	0.002 040 0	1 786.4	1 827.2	4.015 6

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$ Properties calculated as prescribed in IAPWS R6-95(2016)

Table B.1.3: Subcooled/Compressed Liquid Water

T °C	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)	v m^3/kg	$u^\dagger$ kJ/kg	$h^\dagger$ kJ/kg	$s^\dagger$ kJ/(kgK)
	$P = 30\,\text{MPa}$				$P = 50\,\text{MPa}$			
0	0.000 985 7	0.329	29.899	0.000 42	0.000 976 7	0.329	49.166	0.000 88
20	0.000 988 6	82.112	111.77	0.289 68	0.000 980 5	80.931	129.95	0.284 54
40	0.000 995 1	164.05	193.90	0.560 69	0.000 987 2	161.90	211.25	0.552 81
60	0.001 004 2	246.14	276.26	0.815 64	0.000 996 2	243.08	292.88	0.805 49
80	0.001 015 5	328.40	358.86	1.056 4	0.001 007 2	324.42	374.78	1.044 2
100	0.001 029 0	410.87	441.74	1.284 7	0.001 020 1	405.93	456.94	1.270 5
120	0.001 044 5	493.66	524.00	1.502 0	0.001 034 9	487.69	539.43	1.485 9
140	0.001 062 3	576.89	608.76	1.709 8	0.001 051 7	569.77	622.36	1.691 6
160	0.001 082 3	660.74	693.21	1.909 4	0.001 070 4	652.32	705.84	1.888 9
180	0.001 104 9	745.40	778.54	2.102 0	0.001 091 4	735.49	790.06	2.079 0
200	0.001 130 4	831.10	865.02	2.288 8	0.001 114 9	819.45	875.19	2.262 8
220	0.001 159 5	918.14	952.93	2.470 7	0.001 141 2	904.39	961.45	2.441 4
240	0.001 192 7	1 006.9	1 042.7	2.649 1	0.001 170 8	990.55	1 049.1	2.615 6
260	0.001 231 4	1 097.8	1 134.7	2.825 0	0.001 204 4	1 078.2	1 138.4	2.786 4
280	0.001 277 0	1 191.5	1 229.8	3.000 1	0.001 243 0	1 167.7	1 229.9	2.954 7
300	0.001 332 2	1 288.9	1 328.9	3.176 0	0.001 287 9	1 259.6	1 323.0	3.121 8
320	0.001 401 4	1 391.6	1 433.7	3.355 7	0.001 340 9	1 354.3	1 421.4	3.288 8
340	0.001 493 2	1 502.3	1 547.1	3.543 8	0.001 404 9	1 452.9	1 523.1	3.457 5
360	0.001 627 6	1 626.7	1 675.6	3.749 8	0.001 484 8	1 556.5	1 630.7	3.630 1
380	0.001 872 9	1 782.0	1 838.2	4.002 5	0.001 588 4	1 667.1	1 746.5	3.810 1

† Reference states: $u_f(0.01\,°\text{C}) \equiv 0$, $s_f(0.01\,°\text{C}) \equiv 0$ Properties calculated as prescribed in IAPWS R6-95(2016)