

8C Properties of Superheated Steam (SI Units)

Source: R. W. Haywood, *Thermodynamic Tables in SI (Metric) Units*, Cambridge University Press, 1968. Adapted with permission. Water is a liquid in the enclosed region between 50 and 350°C. \hat{h} = specific enthalpy (kJ/kg), \hat{u} = specific internal energy (kJ/kg), \hat{v} = specific volume (m³/kg).

P (bars)	Sat'd T_{sat} (°C)	Sat'd Water	Sat'd Steam	Temperature (°C)										Temperature (°C)						
				50	75	100	150	200	250	300	350	400	450	500	550	600	650	700	750	
0.0	\hat{h}	—	—	2595	2642	2689	2784	2880	2978	3077	3177	3280	3384	3497	3597	3706	3816	3929	4043	\hat{h}
(—)	\hat{u}	—	—	2446	2481	2517	2589	2662	2736	2812	2890	2969	3050	3132	3217	3303	3390	3480	3571	\hat{u}
	\hat{v}	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	\hat{v}
0.1	\hat{h}	191.8	2584.8	2593	2640	2688	2783	2880	2977	3077	3177	3280	3384	3489	3596	3706	3816	3929	4043	\hat{h}
(45.8)	\hat{u}	191.8	2438.0	2444	2480	2516	2588	2661	2736	2812	2890	2969	3050	3132	3217	3303	3390	3480	3571	\hat{u}
	\hat{v}	0.00101	14.7	14.8	16.0	17.2	19.5	21.8	24.2	26.5	28.7	31.1	33.3	35.7	38.0	40.3	42.6	44.8	47.2	\hat{v}
0.5	\hat{h}	340.6	2646.0	209.3	313.9	2683	2780	2878	2976	3076	3177	3279	3383	3489	3596	3705	3816	3929	4043	\hat{h}
(81.3)	\hat{u}	340.6	2484.0	209.2	313.9	2512	2586	2660	2735	2811	2889	2969	3049	3132	3216	3302	3390	3480	3571	\hat{u}
	\hat{v}	0.00103	3.24	0.00101	0.00103	3.41	3.89	4.35	4.83	5.29	5.75	6.21	6.67	7.14	7.58	8.06	8.55	9.01	9.43	\hat{v}
1.0	\hat{h}	417.5	2675.4	209.3	314.0	2676	2776	2875	2975	3074	3176	3278	3382	3488	3596	3705	3816	3928	4042	\hat{h}
(99.6)	\hat{u}	417.5	2506.1	209.2	313.9	2507	2583	2658	2734	2811	2889	2968	3049	3132	3216	3302	3390	3479	3570	\hat{u}
	\hat{v}	0.00104	1.69	0.00101	0.00103	1.69	1.94	2.17	2.40	2.64	2.87	3.11	3.33	3.57	3.80	4.03	4.26	4.48	4.72	\hat{v}
5.0	\hat{h}	640.1	2747.5	209.7	314.3	419.4	632.2	2855	2961	3065	3168	3272	3379	3484	3592	3702	3813	3926	4040	\hat{h}
(151.8)	\hat{u}	639.6	2560.2	209.2	313.8	418.8	631.6	2643	2724	2803	2883	2964	3045	3128	3213	3300	3388	3477	3569	\hat{u}
	\hat{v}	0.00109	0.375	0.00101	0.00103	0.00104	0.00109	0.425	0.474	0.522	0.571	0.617	0.664	0.711	0.758	0.804	0.850	0.897	0.943	\hat{v}
10	\hat{h}	762.6	2776.2	210.1	314.7	419.7	632.5	2827	2943	3052	3159	3264	3371	3478	3587	3697	3809	3923	4038	\hat{h}
(179.9)	\hat{u}	761.5	2582	209.1	313.7	418.7	631.4	2621	2710	2794	2876	2958	3041	3124	3210	3296	3385	3475	3567	\hat{u}
	\hat{v}	0.00113	0.194	0.00101	0.00103	0.00104	0.00109	0.206	0.233	0.258	0.282	0.307	0.330	0.353	0.377	0.402	0.424	0.448	0.472	\hat{v}
20	\hat{h}	908.6	2797.2	211.0	315.5	420.5	633.1	852.6	2902	3025	3139	3249	3358	3467	3578	3689	3802	3916	4032	\hat{h}
(212.4)	\hat{u}	906.2	2598.2	209.0	313.5	418.4	630.9	850.2	2679	2774	2862	2946	3031	3115	3202	3290	3379	3470	3562	\hat{u}
	\hat{v}	0.00118	0.09950	0.00101	0.00102	0.00104	0.00109	0.00116	0.111	0.125	0.139	0.151	0.163	0.175	0.188	0.200	0.211	0.223	0.235	\hat{v}
40	\hat{h}	1087.4	2800.3	212.7	317.1	422.0	634.3	853.4	1085.8	2962	3095	3216	3331	3445	3559	3673	3788	3904	4021	\hat{h}
(250.3)	\hat{u}	1082.4	2601.3	208.6	313.0	417.8	630.0	848.8	1080.8	2727	2829	2922	3011	3100	3188	3278	3368	3460	3554	\hat{u}
	\hat{v}	0.00125	0.04975	0.00101	0.00102	0.00104	0.00109	0.00115	0.00125	0.0588	0.0665	0.0734	0.0799	0.0864	0.0926	0.0987	0.105	0.111	0.117	\hat{v}
60	\hat{h}	1213.7	2785.0	214.4	318.7	423.5	635.6	854.2	1085.8	2885	3046	3180	3303	3422	3539	3657	3774	3892	4011	\hat{h}
(275.6)	\hat{u}	1205.8	2590.4	208.3	312.6	417.3	629.1	847.3	1078.3	2668	2792	2896	2991	3083	3174	3265	3357	3451	3545	\hat{u}
	\hat{v}	0.00132	0.0325	0.00101	0.00103	0.00104	0.00109	0.00115	0.00125	0.0361	0.0422	0.0474	0.0521	0.0566	0.0609	0.0652	0.0693	0.0735	0.0776	\hat{v}
80	\hat{h}	1317.1	2759.9	216.1	320.3	425.0	636.8	855.1	1085.8	2787	2990	3142	3274	3399	3520	3640	3759	3879	4000	\hat{h}
(295.0)	\hat{u}	1306.0	2571.7	208.1	312.3	416.7	628.2	845.9	1075.8	2593	2750	2867	2969	3065	3159	3252	3346	3441	3537	\hat{u}
	\hat{v}	0.00139	0.0235	0.00101	0.00102	0.00104	0.00109	0.00115	0.00124	0.0243	0.0299	0.0344	0.0382	0.0417	0.0450	0.0483	0.0515	0.0547	0.0578	\hat{v}
100	\hat{h}	1408.0	2727.7	217.8	322.9	426.5	638.1	855.9	1085.8	1343.4	2926	3100	3244	3375	3500	3623	3745	3867	3989	\hat{h}
(311.0)	\hat{u}	1393.5	2547.3	207.8	311.7	416.1	627.3	844.4	1073.4	1329.4	2702	2836	2946	3047	3144	3240	3335	3431	3528	\hat{u}
	\hat{v}	0.00145	0.0181	0.00101	0.00102	0.00104	0.00109	0.00115	0.00124	0.00140	0.0224	0.0264	0.0298	0.0328	0.0356	0.0383	0.0410	0.0435	0.0461	\hat{v}
150	\hat{h}	1611.0	2615.0	222.1	326.0	430.3	641.3	858.1	1086.2	1338.2	2695	2975	3160	3311	3448	3580	3708	3835	3962	\hat{h}
(342.1)	\hat{u}	1586.1	2459.9	207.0	310.7	414.7	625.0	841.0	1067.7	1317.6	2523	2744	2883	2999	3105	3207	3307	3407	3507	\hat{u}
	\hat{v}	0.00166	0.0103	0.00101	0.00102	0.00104	0.00108	0.00114	0.00123	0.00138	0.0115	0.0157	0.0185	0.0208	0.0229	0.0249	0.0267	0.0286	0.0304	\hat{v}
200	\hat{h}	1826.5	2418.4	226.4	330.0	434.0	644.5	860.4	1086.7	1334.3	1647.1	2820	3064	3241	3394	3536	3671	3804	3935	\hat{h}
(365.7)	\hat{u}	1785.7	2300.8	206.3	309.7	413.2	622.9	837.7	1062.2	1307.1	1613.7	2622	2810	2946	3063	3172	3278	3382	3485	\hat{u}
	\hat{v}	0.00204	0.005875	0.00100	0.00102	0.00103	0.00108	0.00114	0.00122	0.00136	0.00167	0.009950	0.0127	0.0148	0.0166	0.0182	0.0197	0.0211	0.0225	\hat{v}
221.2(P _s) (374.15)(T _s)	\hat{h}	2108	2108	228.2	331.7	435.7	645.8	861.4	1087.0	1332.8	1635.5	2733	3020	3210	3370	3516	3655	3790	3923	\hat{h}
	\hat{u}	2037.8	2037.8	206.0	309.2	412.8	622.0	836.3	1060.0	1302.9	1600.3	2553	2776	2922	3045	3157	3265	3371	3476	\hat{u}
	\hat{v}	0.00317	0.00317	0.00100	0.00102	0.00103	0.00108	0.00114	0.00122	0.00135	0.00163	0.008157	0.0110	0.0130	0.0147	0.0162	0.0176	0.0190	0.0202	\hat{v}
250	\hat{h}	—	—	230.7	334.0	437.8	647.7	862.8	1087.5	1331.1	1625.0	2582	2954	3166	3337	3490	3633	3772	3908	\hat{h}
(—)	\hat{u}	—	—	205.7	308.7	412.1	620.8	804.4	1057.0	1297.5	1585.0	2432	2725	2888	3019	3137	3248	3356	3463	\hat{u}
	\hat{v}	—	—	0.00100	0.00101	0.00103	0.00108	0.00113	0.00122	0.00135	0.00160	0.006013	0.009174	0.0111	0.0127	0.0141	0.0143	0.0166	0.0178	\hat{v}
300	\hat{h}	—	—	235.0	338.1	441.6	650.9	865.2	1088.4	1328.7	1609.9	2162	2826	3085	3277	3443	3595	3740	3880	\hat{h}
(—)	\hat{u}	—	—	205.0	307.7	410.8	618.7	831.3	1052.1	1288.7	1563.3	2077	2623	2825	2972	3100	3218	3330	3441	\hat{u}
	\hat{v}	—	—	0.0009990	0.00101	0.00103	0.00107	0.00113	0.00121	0.00133	0.00155	0.002830	0.006734	0.008680	0.0102	0.0114	0.0126	0.0136	0.0147	\hat{v}
500	\hat{h}	—	—	251.9	354.2	456.8	664.1	875.4	1093.6	1323.7	1576.3	1878	2293	2723	3021	3248	3439	3610	3771	\hat{h}
(—)	\hat{u}	—	—	202.4	304.0	405.8	611.0	819.7	1034.3	1259.3	1504.1	1791	2169	2529	2765	2946	3091	3224	3350	\hat{u}
	\hat{v}	—	—	0.0009911	0.00100	0.00102	0.00106	0.00111	0.00119											