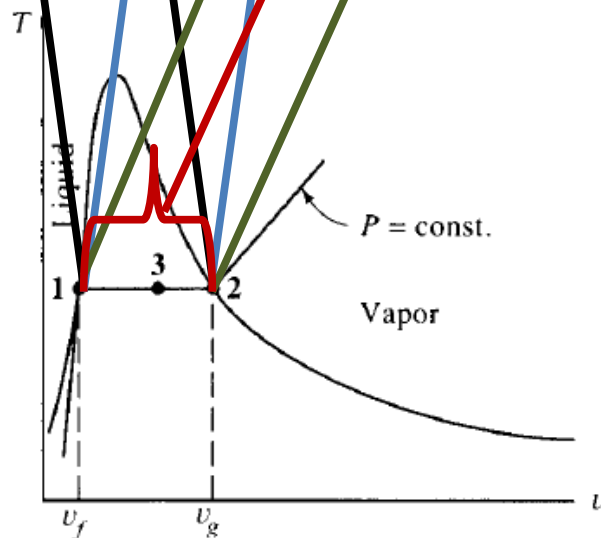


# STEAM TABLES

## Saturated water table (Temperature table)

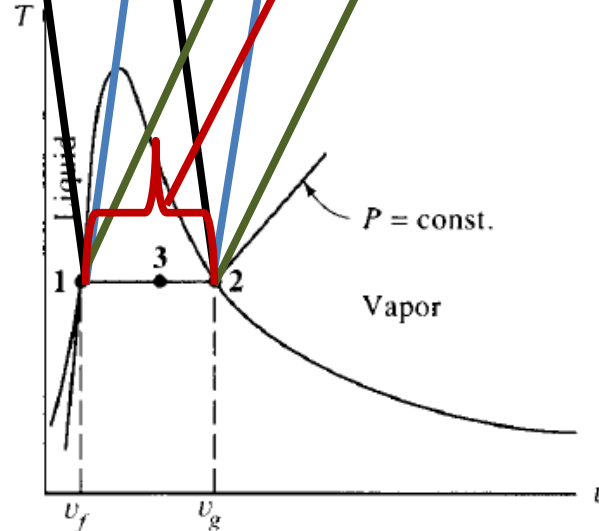
$T, ^\circ\text{C}$	$P, \text{MPa}$	$v, \text{m}^3/\text{kg}$		$u, \text{kJ/kg}$		$h, \text{kJ/kg}$			$s, \text{kJ/kg} \cdot \text{K}$		
		$v_f$	$v_g$	$u_f$	$u_g$	$h_f$	$h_{fg}$	$h_g$	$s_f$	$s_{fg}$	$s_g$
0.01	0.000611	0.001000	206.1	0	2375.3	0	2454.1	2454.1	0.0000	9.1571	9.1571
2	0.0007056	0.001000	179.9	8.4	2378.1	8.4	2496.6	2505.0	0.0305	9.0738	9.1043
5	0.0008721	0.001000	147.1	21.0	2387.2	21.0	2489.5	2510.5	0.0761	8.9505	9.0266
10	0.001228	0.001000	106.4	42.0	2389.2	42.0	2477.7	2519.7	0.1510	8.7506	8.9016
20	0.002338	0.001002	57.79	83.9	2402.9	83.9	2464.2	2538.1	0.2965	8.3715	8.6680
30	0.004246	0.001004	32.90	125.8	2416.6	125.8	2430.4	2556.2	0.4367	8.0174	8.4541
40	0.007383	0.001008	19.52	167.5	2430.1	167.5	2406.8	2574.3	0.5723	7.6855	8.2578
50	0.01235	0.001012	12.03	209.3	2443.5	209.3	2382.8	2592.1	0.7036	7.3735	8.0771
60	0.01994	0.001017	7.671	251.1	2456.5	251.1	2358.5	2609.6	0.8310	7.0794	7.9104
70	0.03119	0.001023	5.042	292.9	2469.5	293.0	2333.8	2626.8	0.9549	6.8012	7.7561
80	0.04739	0.001029	3.407	334.5	2482.2	334.9	2308.8	2643.7	1.0754	6.5376	7.6130



# STEAM TABLES

## Saturated water table (Pressure table)

$P$ , MPa	$T$ , °C	$v$ , m <sup>3</sup> /kg		$u$ , kJ/kg		$h$ , kJ/kg			$s$ , kJ/kg·K		
		$v_f$	$v_g$	$u_f$	$u_g$	$h_f$	$h_{fg}$	$h_g$	$s_f$	$s_{fg}$	$s_g$
0.0006	0.01	0.001000	206.1	0.0	2375.3	0.0	2501.3	2501.3	0.0000	9.1571	9.1571
0.0008	3.8	0.001000	159.7	15.8	2380.5	15.8	2492.5	2508.3	0.0575	9.0007	9.0582
0.001	7.0	0.001000	129.2	29.3	2385.0	29.3	2484.9	2514.2	0.1059	8.8706	8.9765
0.0012	9.7	0.001000	108.7	40.6	2388.7	40.6	2478.5	2519.1	0.1460	8.7639	8.9099
0.0014	12.0	0.001001	93.92	50.3	2391.9	50.3	2473.1	2523.4	0.1802	8.6736	8.8538
0.0016	14.0	0.001001	82.76	58.9	2394.7	58.9	2468.2	2527.1	0.2101	8.5952	8.8053
0.002	17.5	0.001001	67.00	73.5	2399.5	73.5	2460.0	2533.5	0.2606	8.4639	8.7245
0.003	24.1	0.001003	45.67	101.0	2408.5	101.0	2444.5	2545.5	0.3544	8.2240	8.5784
0.004	29.0	0.001004	34.80	121.4	2415.2	121.4	2433.0	2554.4	0.4225	8.0529	8.4754
0.006	36.2	0.001006	23.74	151.5	2424.9	151.5	2415.9	2567.4	0.5208	7.8104	8.3312



# STEAM TABLES

## Superheated steam

Look for given pressure and align with the given temperature and then read the desired value. e.g. 2 MPa & max temp 400 °C

<i>T</i>	<i>v</i>	<i>u</i>	<i>h</i>	<i>s</i>	<i>v</i>	<i>u</i>	<i>h</i>	<i>s</i>	<i>v</i>	<i>u</i>	<i>h</i>	<i>s</i>
	<i>P</i> = 1.60 MPa (201.4°C)				<i>P</i> = 1.80 MPa (207.2°C)				<i>P</i> = 2.00 MPa (212.4°C)			
Sat.	.1238	2596	2794	6.422	.1104	2598	2797	6.3794	.099 6	2600	2800	6.341
250	.1418	2692	2919	6.673	.1250	2686	2911	6.6066	.1114	2680	2902	6.545
300	.1586	2781	3035	6.884	.1402	2777	3029	6.8226	.1255	2773	3024	6.766
350	.1746	2866	3145	7.069	.1546	2863	3141	7.0100	.1386	2860	3137	6.956
400	.1900	2950	3254	7.237	.1685	2948	3251	7.1794	.1512	2945	3248	7.128
500	.2203	3119	3472	7.539	.1955	3118	3470	7.4825	.1757	3116	3468	7.432
600	.2500	3293	3693	7.808	.2220	3292	3692	7.7523	.1996	3291	3690	7.702
700	.2794	3473	3920	8.054	.2482	3473	3918	7.9983	.2232	3471	3917	7.949
800	.3086	3658	4152	8.281	.2742	3658	4151	8.2258	.2467	3657	4150	8.176
900	.3377	3850	4391	8.494	.3001	3850	4390	8.4386	.2700	3849	4389	8.390

# STEAM TABLES

$P$ , MPa	$T$ , °C	$v$ , m <sup>3</sup> /kg		$u$ , kJ/kg		$h$ , kJ/kg			$s$ , kJ/kg·K		
		$v_f$	$v_g$	$u_f$	$u_g$	$h_f$	$h_{fg}$	$h_g$	$s_f$	$s_{fg}$	$s_g$
0.0006	0.01	0.001000	206.1	0.0	2375.3	0.0	2501.3	2501.3	0.0000	9.1571	9.1571
0.0008	3.8	0.001000	159.7	15.8	2380.5	15.8	2492.5	2508.3	0.0575	9.0007	9.0582
0.001	7.0	0.001000	129.2	29.3	2385.0	29.3	2484.9	2514.2	0.1059	8.8706	8.9765
0.0012	9.7	0.001000	108.7	40.6	2388.7	40.6	2478.5	2519.1	0.1460	8.7639	8.9099
0.0014	12.0	0.001001	93.92	50.3	2391.9	50.3	2473.1	2523.4	0.1802	8.6736	8.8538
0.0016	14.0	0.001001	82.76	58.9	2394.7	58.9	2468.2	2527.1	0.2101	8.5952	8.8053
0.002	17.5	0.001001	67.00	73.5	2399.5	73.5	2460.0	2533.5	0.2606	8.4639	8.7245
0.003	24.1	0.001003	45.67	101.0	2408.5	101.0	2444.5	2545.5	0.3544	8.2240	8.5784
0.004	29.0	0.001004	34.80	121.4	2415.2	121.4	2433.0	2554.4	0.4225	8.0529	8.4754
0.006	36.2	0.001006	23.74	151.5	2424.9	151.5	2415.9	2567.4	0.5208	7.8104	8.3312

***Linear interpolation*** may be necessary in some instances.

E.g. Enthalpy of saturated water (liquid) at 5 kPa (0.005 MPa):

**h@4 kPa = 2433.0 kJ/kg**

**h@5 kPa = ?**

**h@6 kPa = 2415.9 kJ/kg**

# STEAM TABLES

Determine the volume change when 10 kg of saturated water is completely vaporized at a pressure of:

- (a) 1 kPa,
- (b) 200 kPa, and
- (c) 8 000 kPa.

## SOLUTION

