



This is “Appendix F: Properties of Water”, appendix 6 from the book [Principles of General Chemistry \(index.html\)](#) (v. 1.0M).

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## Chapter 30

### Appendix F: Properties of Water

<b>Density:</b> 0.99984 g/cm <sup>3</sup> at 0°C
0.99970 g/cm <sup>3</sup> at 10°C
0.99821 g/cm <sup>3</sup> at 20°C
0.98803 g/cm <sup>3</sup> at 50°C
0.95840 g/cm <sup>3</sup> at 100°C
<b>Enthalpy (heat) of vaporization:</b> 45.054 kJ/mol at 0°C
43.990 kJ/mol at 25°C
42.482 kJ/mol at 60°C
40.657 kJ/mol at 100°C
<b>Surface tension:</b> 74.23 J/m <sup>2</sup> at 10°C
71.99 J/m <sup>2</sup> at 25°C
67.94 J/m <sup>2</sup> at 50°C
58.91 J/m <sup>2</sup> at 100°C
<b>Viscosity:</b> 1.793 mPa · s at 0°C
0.890 mPa_s at 25°C
0.547 mPa_s at 50°C
0.282 mPa_s at 100°C
<b>Ion-product constant, <math>K_w</math>:</b> $1.15 \times 10^{-15}$ at 0°C
$1.01 \times 10^{-14}$ at 25°C
$5.31 \times 10^{-14}$ at 50°C
$5.43 \times 10^{-13}$ at 100°C
<b>Specific heat (<math>C_s</math>):</b> 4.2176 J/(g·°C) at 0°C
4.1818 J/(g·°C) at 20°C
4.1806 J/(g·°C) at 50°C
4.2159 J/(g·°C) at 100°C

Vapor pressure of water (kPa)							
T(°C)	P(kPa)	T(°C)	P(kPa)	T(°C)	P(kPa)	T(°C)	P(kPa)
0	0.61129	30	4.2455	60	19.932	90	70.117
5	0.87260	35	5.6267	65	25.022	95	84.529
10	1.2281	40	7.3814	70	31.176	100	101.32
15	1.7056	45	9.5898	75	38.563	105	120.79
20	2.3388	50	12.344	80	47.373	110	143.24
25	3.1690	55	15.752	85	57.815	115	169.02

Vapor pressure of water (mmHg)							
T(°C)	P(mmHg)	T(°C)	P(mmHg)	T(°C)	P(mmHg)	T(°C)	P(mmHg)
0	4.585	30	31.844	60	149.50	90	525.91
5	6.545	35	42.203	65	187.68	95	634.01
10	9.211	40	55.364	70	233.84	100	759.95
15	12.793	45	71.929	75	289.24	105	905.99
20	17.542	50	92.59	80	355.32	110	1074.38
25	23.769	55	118.15	85	433.64	115	1267.74

Source of data: *CRC Handbook of Chemistry and Physics*, 84th Edition (2004).