Vapour Pressure of Water

T (°C)	P_{H2O} (mmHg)	T (°C)	P_{H2O} (mmHg)
15	12.8	23	21.1
16	13.6	24	22.4
17	14.5	25	23.8
18	15.5	26	25.2
19	16.5	27	26.7
20	17.5	28	28.3
21	18.7	29	30.0
22	19.8	30	31.8

$1\ atm = 760 mmHg = 760 torr = 1.01325\ x10^5\ Pa = 14.7\ lb/in^2$

$R = 0.0821\ L atm mol^{-1} K^{-1}\ or\ 8.314\ J mol^{-1} K^{-1} \quad K_w = 1.00x10^{-14}$

$$Units\ of\ K = \frac{\left(\frac{L}{mole}\right)^{order-1}}{units\ of\ t} \qquad [A_t] = -kt + [A]_0$$

$$LN[A]_t = -kt + LN[A]_0 \qquad \frac{1}{[A]_t} = Kt + \frac{1}{[A]_0} \qquad t_{\frac{1}{2}} = \frac{[A]_0}{2k}$$

$$t_{\frac{1}{2}} = \frac{LN2}{k} \qquad t_{\frac{1}{2}} = \frac{1}{k[A]_0} \qquad k = Ae^{-\frac{Ea}{RT}} \qquad LNk = -\frac{Ea}{R}\left(\frac{1}{T}\right) + LN\,A$$

$$LN\frac{k2}{k1} = -\frac{Ea}{R}\left(\frac{1}{T_2} - \frac{1}{T_1}\right)$$

$$1J = \frac{kg\,m^2}{s^2} \qquad 1eV = 1.602x10^{-19}\ J \qquad N = 6.022x10^{23}\ mol^{-1}$$

$$E_k = \frac{1}{2}\,mass\ x\ speed$$

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2} \qquad PV = nRT \qquad d = \frac{MP}{RT} \qquad \frac{Rate_A}{Rate_B} = \sqrt{\frac{M_B}{M_A}} \qquad \left(P + \frac{n^2a}{V^2}\right)(V - nb) = nRT$$

$$\ln\frac{K_2}{K_1} = -\frac{\Delta H^\circ_{vap}}{R}\left(\frac{1}{T_2} - \frac{1}{T_1}\right) \qquad K_p = K_c(RT)^{\Delta n} \qquad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H 1.008																	2 He 4.002
3 Li 6.942	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
11 Na 22.99	12 Mg 24.30											13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.88	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.39	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc 98	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
55 Cs 132.9	56 Ba 137.3	57 La 138.9	72 Hf 178.5	73 Ta 181.0	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po 209	85 At 210	86 Rn 222
87 Fr 223	88 Ra 226.0	89 Ac 227.0	104 Unq	105 Unp	106 Unh	107 Uns	108 Uno	109 Une	110 Uun								

58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm 145	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
90 Th 232.0	91 Pa 231.0	92 U 238.0	93 Np 237.0	94 Pu 244	95 Am 243	96 Cm 247	97 Bk 247	98 Cf 251	99 Es 252	100 Fm 257	101 Md 258	102 No 259	103 Lr 260