

CART Periodic Table

ABBREVIATIONS AND SYMBOLS			
amount of substance	<i>n</i>	Faraday constant	<i>F</i>
ampere	<i>A</i>	free energy	<i>G</i>
atmosphere	atm	frequency	<i>ν</i>
atomic mass unit	<i>u</i>	gas constant	<i>R</i>
Avogadro constant	<i>N_A</i>	gram	<i>g</i>
Celsius temperature	°C	hour	<i>h</i>
centi- prefix	<i>c</i>	joule	<i>J</i>
coulomb	<i>C</i>	kelvin	<i>K</i>
density	<i>d</i>	kilo- prefix	<i>k</i>
electromotive force	<i>E</i>	liter	<i>L</i>
energy of activation	<i>E_a</i>	measure of pressure mm Hg	
enthalpy	<i>H</i>	milli- prefix	<i>m</i>
entropy	<i>S</i>	molal	<i>m</i>
equilibrium constant	<i>K</i>	molar	<i>M</i>
		molar mass	<i>M</i>
		mole	mol
		Planck's constant	<i>h</i>
		pressure	<i>P</i>
		rate constant	<i>k</i>
		reaction quotient	<i>Q</i>
		second	<i>s</i>
		speed of light	<i>c</i>
		temperature, K	<i>T</i>
		time	<i>t</i>
		vapor pressure	VP
		volt	<i>V</i>
		volume	<i>V</i>

CONSTANTS
$R = 8.314 \text{ J} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$
$R = 0.0821 \text{ L} \cdot \text{atm} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$
$F = 96,500 \text{ C} \cdot \text{mol}^{-1}$
$F = 96,500 \text{ J} \cdot \text{V}^{-1} \cdot \text{mol}^{-1}$
$N_A = 6.022 \times 10^{23} \text{ mol}^{-1}$
$h = 6.626 \times 10^{-34} \text{ J} \cdot \text{s}$
$c = 2.998 \times 10^8 \text{ m} \cdot \text{s}^{-1}$
$0^\circ \text{C} = 273.15 \text{ K}$
$1 \text{ atm} = 760 \text{ mm Hg}$
Specific heat capacity of $\text{H}_2\text{O} = 4.184 \text{ J} \cdot \text{g}^{-1} \cdot \text{K}^{-1}$

EQUATIONS

$$E = E^\circ - \frac{RT}{nF} \ln Q$$

$$\ln K = \left(\frac{-\Delta H^\circ}{R} \right) \left(\frac{1}{T} \right) + \text{constant}$$

$$\ln \left(\frac{k_2}{k_1} \right) = \frac{E_a}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$$

PERIODIC TABLE OF THE ELEMENTS

PERIODIC TABLE OF THE ELEMENTS																	18
1																8A	
1A	2											13	14	15	16	17	2
H	2A											3A	4A	5A	6A	7A	He
1.008												10.81	12.01	14.01	16.00	19.00	4.003
3	4	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Li	Be	3B	4B	5B	6B	7B	8B	8B	8B	1B	2B	Al	Si	P	S	Cl	Ar
6.941	9.012											26.98	28.09	30.97	32.07	35.45	39.95
11	12											13	14	15	16	17	18
Na	Mg											Al	Si	P	S	Cl	Ar
22.99	24.31											26.98	28.09	30.97	32.07	35.45	39.95
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
39.10	40.08	44.96	47.88	50.94	52.00	54.94	55.85	58.93	58.69	63.55	65.39	69.72	72.61	74.92	78.96	79.90	83.80
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
85.47	87.62	88.91	91.22	92.91	95.94	(98)	101.1	102.9	106.4	107.9	112.4	114.8	118.7	121.8	127.6	126.9	131.3
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
132.9	137.3	138.9	178.5	180.9	183.8	186.2	190.2	192.2	195.1	197.0	200.6	204.4	207.2	209.0	(209)	(210)	(222)
87	88	89	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	(Uut)	Fl	(Uup)	Lv	(Uus)	(Uuo)
(223)	(226)	(227)	(261)	(262)	(263)	(262)	(265)	(266)	(281)	(272)	(285)	(284)	(289)	(288)	(293)	(294)	(294)
		58	59	60	61	62	63	64	65	66	67	68	69	70	71		
		Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu		
		140.1	140.9	144.2	(145)	150.4	152.0	157.3	158.9	162.5	164.9	167.3	168.9	173.0	175.0		
		90	91	92	93	94	95	96	97	98	99	100	101	102	103		
		Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr		
		232.0	231.0	238.0	(237)	(244)	(243)	(247)	(247)	(251)	(252)	(257)	(258)	(259)	(262)		