

$$R = 8,314 \text{ J mol}^{-1} \text{ K}^{-1}$$

$$F = 96500 \text{ A s mol}^{-1}$$

Kaavat:

0. kertaluku:  $c = -kt + c_0$     1. kertaluku:  $\ln c = -kt + \ln c_0$     2. kertaluku:  $\frac{1}{c} = kt + \frac{1}{c_0}$

$$k = A e^{-(E_a / RT)}$$



$$E(\text{kenno}) = E^o(\text{kenno}) - \frac{RT}{zF} \cdot \ln \left( \frac{[P]^p [R]^r}{[A]^a [B]^b} \right) \quad Q = It = znF$$

### Alkuaineiden jaksollinen järjestelmä

	1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H 1,008																		2 He 4,003
2	3 Li 6,941	4 Be 9,012												5 B 10,81	6 C 12,011	7 N 14,007	8 O 15,999	9 F 18,998	10 Ne 20,179
3	11 Na 22,990	12 Mg 24,305												13 Al 26,982	14 Si 28,086	15 P 30,974	16 S 32,06	17 Cl 35,453	18 Ar 39,948
4	19 K 39,098	20 Ca 40,08	21 Sc 44,956		22 Ti 47,88	23 V 50,942	24 Cr 51,996	25 Mn 54,938	26 Fe 55,847	27 Co 58,933	28 Ni 58,70	29 Cu 63,546	30 Zn 65,38	31 Ga 69,72	32 Ge 72,59	33 As 74,922	34 Se 78,96	35 Br 79,904	36 Kr 83,80
5	37 Rb 85,468	38 Sr 87,62	39 Y 88,906		40 Zr 91,22	41 Nb 92,906	42 Mo 95,94	43 Tc (97)	44 Ru 101,07	45 Rh 102,91	46 Pd 106,4	47 Ag 107,87	48 Cd 112,41	49 In 114,82	50 Sn 118,69	51 Sb 121,75	52 Te 127,60	53 I 126,90	54 Xe 131,30
6	55 Cs 132,91	56 Ba 137,33	57 La 138,91	L	72 Hf 178,49	73 Ta 180,95	74 W 183,85	75 Re 186,21	76 Os 190,2	77 Ir 192,22	78 Pt 195,09	79 Au 196,97	80 Hg 200,59	81 Tl 204,37	82 Pb 207,2	83 Bi 208,98	84 Po (209)	85 At (210)	86 Rn (222)
7	87 Fr (223)	88 Ra 226,03	89 Ac 227,03	A	104 Ku	105 Ha													

L	58 Ce 140,12	59 Pr 140,91	60 Nd 144,24	61 Pm (145)	62 Sm 150,4	63 Eu 151,96	64 Gd 157,25	65 Tb 158,93	66 Dy 162,50	67 Ho 164,93	68 Er 167,26	69 Tm 168,93	70 Yb 173,04	71 Lu 174,97
A	90 Th 232,04	91 Pa 231,04	92 U 238,05	93 Np 237,03	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (254)	100 Fm (257)	101 Md (258)	102 No (255)	103 Lr (260)