

Conversion Factors

Length				
m	cm	Å	pm	in
1	10 ²	10 ¹⁰	10 ¹²	39.37
10 ⁻²	1	10 ⁸	10 ¹⁰	0.3937
10 ⁻⁶	10 ⁻⁴	10 ⁴	10 ⁶	3.937 x 10 ⁻⁵
10 ⁻¹⁰	10 ⁻⁸	1	10 ²	3.937 x 10 ⁻⁹
10 ⁻¹²	10 ⁻¹⁰	10 ⁻²	1	3.937 x 10 ⁻¹¹
0.0254	2.54	2.54 x 10 ⁸	2.54 x 10 ¹⁰	1

Energy				
erg	J (= VC)	cal	eV	cm-1
1	10 ⁻⁷	2.389 x 10 ⁻⁸	6.242 x 10 ¹¹	5.0342 x 10 ¹⁵
10 ⁷	1	0.2389	6.242 x 10 ¹⁸	5.0342 x 10 ²²
4.184 x 10 ⁷	4.184	1	2.612 x 10 ¹⁹	2.107 x 10 ²³
1.602 x 10 ⁻¹²	1.602 x 10 ⁻¹⁹	3.829 x 10 ⁻²⁰	1	8066.0
1.986 x 10 ⁻¹⁶	1.986 x 10 ⁻²³	4.747 x 10 ⁻²⁴	1.240 x 10 ⁻⁴	1
4.358 x 10 ⁻¹¹	4.359 x 10 ⁻¹⁸	1.0414 x 10 ⁻¹⁸	27.208	2.1944 x 10 ⁵

erg/mol	Energy/mol		Energy/molecule	
	J/mol	cal/mol	eV/molecule	cm-1/molecule
1	10 ⁻⁷	2.389 x 10 ⁻⁸	1.0364 x 10 ⁻¹²	8.359 x 10 ⁻⁹
10 ⁷	1	0.2389	1.0364 x 10 ⁻⁵	8.359 x 10 ⁻²
4.184 x 10 ⁷	4.184	1	4.337 x 10 ⁻⁵	0.3498
9.648 x 10 ¹¹	9.648 x 10 ⁴	23.06 x 10 ³	1	8066.0
1.1961 x 10 ⁸	11.961	2.859	1.240 x 10 ⁻⁴	1
2.6252 x 10 ¹³	2.6252 x 10 ⁶	6.272 x 10 ⁵	27.208	2.1944 x 10 ⁵

E & M	
cgs or esu	SI
2.9979 x 10 ⁹ esu	1 C (coulomb)
1 statvolt	299.792 V
10 ⁴ G(gauss)	1 T (telsa)

Constants

	Quantity	SI
N	Avogadro's Const	6.02252 x 10 ²³ mol ⁻¹
c	velocity of light	2.997925 x 10 ⁸ m s ⁻¹
h	Planck's const	6.6262 x 10 ⁻³⁴ J s
e	Charge of elect	1.6022 x 10 ⁻¹⁹ C
k	Boltz. Const	1.38066 x 10 ⁻²³ J K ⁻¹
F	Faraday Const	96487.0 C mol ⁻¹
R	Gas Const	8.3144 J K ⁻¹ mol ⁻¹
R		1.9872 cal K ⁻¹ mol ⁻¹
R		0.08206 L atm K ⁻¹
g	acc of gravity	9.80665 m ⁻²
m_e	mass of eletron	9.1095 x 10 ⁻³¹ kg
a₀	Bohr radius	5.2918 x 10 ⁻¹¹ m
ε₀	Permittivity of vacuum	8.85419 x 10 ⁻¹² C ² m ⁻¹ J ⁻¹ (or 10 ⁷ /(4 π c ²))
π		3.14159265
e	natural number e	2.71828
ln(10)		2.30259