

# CONSTANTS

a	year = $3.1558 \times 10^7$ s
amu	atomic mass unit = $1.660\ 54 \times 10^{-27}$ kg
c	velocity of light (in vacuum) = $2.997\ 925 \times 10^8$ m·s <sup>-1</sup>
cal	calorie = 4.184 J
e	elementary/electron/proton charge = $1.602\ 18 \times 10^{-19}$ C
eV	electronvolt = $1.602\ 18 \times 10^{-19}$ J
g	acceleration of free fall = $9.806\ 65$ m·s <sup>-2</sup>
h	Planck constant = $6.626\ 08 \times 10^{-34}$ J·s
J	Joule = 0.2390 cal
k	Boltzmann constant = $1.380\ 54 \times 10^{-23}$ J/K
m <sub>e</sub>	electron mass = $9.109\ 39 \times 10^{-31}$ kg
m <sub>n</sub>	neutron mass = $1.674\ 93 \times 10^{-27}$ kg
m <sub>p</sub>	proton mass = $1.672\ 62 \times 10^{-27}$ kg
M/E eq.	mass/energy equivalence: 1 amu ≡ 931.5 MeV
N <sub>A</sub>	Avogadro constant = $6.022\ 14 \times 10^{23}$ mol <sup>-1</sup>
π	= 3.141 592 6535
R	gas constant = $8.314\ 51$ J·K <sup>-1</sup> ·mol <sup>-1</sup>
T	thermodynamic temperature = t (°C) + 273.15 K
V <sub>m</sub>	molar volume (= 22.41 L·mole <sup>-1</sup> at STP)