Physical Constants (SI and cgs units)

Mass of electron (free electron mass; rest mass)	$m_0 = 9.11 \times 10^{-31}$ (kg) $= 9.11 \times 10^{-28}$ (g)
Charge of electron	$e = 1.602 \times 10^{-19}$ (C) (SI-unit)
	$= 4.803 \times 10^{-10}$ (statcoul) $\equiv (\mathrm{cm}^{3/2} \cdot \mathrm{g}^{1/2}/\mathrm{s})$ (el. static cgs units)
	$= 1.602 \times 10^{-20}$ (abcoul) $\equiv (\mathrm{g}^{1/2} \cdot \mathrm{cm}^{1/2})$ (el. magnetic cgs units)
Velocity of light in vacuum	$c = 2.998 \times 10^{8}$ (m/s) $= 2.998 \times 10^{10}$ (cm/s)
Planck constant	$h = 6.626 \times 10^{-34}$ (J · s) $= 6.626 \times 10^{-27}$ (g · cm²/s)
	$= 4.136 \times 10^{-15}$ (eV · s)
	$\hbar = 1.054 \times 10^{-34}$ (J · s) $= 1.054 \times 10^{-27}$ (g · cm²/s)
	$= 6.582 \times 10^{-16}$ (eV · s)
Avogadro constant	$N_0 = 6.022 \times 10^{23}$ (atoms/mol)
Boltzmann constant	$k_B = 1.381 \times 10^{-23}$ (J/K) $= 1.381 \times 10^{-16}$ (erg/K)
	$= 8.616 \times 10^{-5}$ (eV/K)
Bohr magneton	$\mu_B = 9.274 \times 10^{-24}$ (J/T) $\equiv (\mathrm{A} \cdot \mathrm{m}^2)$
	$= 9.274 \times 10^{-21} \left(\frac{\mathrm{erg}}{\mathrm{G}}\right) \equiv (\mathrm{g}^{1/2}\ \mathrm{cm}^{5/2}/\mathrm{s})$
Gas constant	$R = 8.314$ (J/mol · K) $= 1.986$ (cal/mol · K)
Permittivity of emtpy space (vacuum)	$\varepsilon_0 = 1/\mu_0 c^2 = 8.854 \times 10^{-12}$ (F/m) $\equiv (\mathrm{A} \cdot \mathrm{s}/\mathrm{V} \cdot \mathrm{m})$
Permeability of empty space (vacuum)	$\mu_0 = 4\pi \times 10^{-7} = 1.257 \times 10^{-6}$ (H/m) $\equiv (\mathrm{V} \cdot \mathrm{s}/\mathrm{A} \cdot \mathrm{m})$
	$\equiv (\mathrm{kg} \cdot \mathrm{m}/\mathrm{A}^2 \cdot \mathrm{s}^2)$

Useful Conversions

1 (eV) $= 1.602 \times 10^{-12}$ (g · cm²/s²) $= 1.602 \times 10^{-19}$ (kg · m²/s²)
$= 1.602 \times 10^{-19}$ (J) $= 3.829 \times 10^{-20}$ (cal)

1 (J) $= 1\left(\frac{\mathrm{kg} \cdot \mathrm{m}^2}{\mathrm{s}^2}\right) = 10^7$ (erg) $= 10^7\left(\frac{\mathrm{g} \cdot \mathrm{cm}^2}{\mathrm{s}^2}\right) = 2.39 \times 10^{-1}$ (cal)

1 (Rydberg) = 13.6 (eV)
1 (1/Ωcm) $= 9 \times 10^{11}$ (1/s)
1 (1/Ωm) $= 9 \times 10^{9}$ (1/s)
1 (C) = 1 (A · s) = 1 (J/V)
1 (Å) $= 10^{-10}$ (m)
1 (torr) ≡ 1 (mm Hg) = 133.3 (N/m²) ≡ 133.3 (Pa)
1 (bar) $= 10^5$ (N/m²) $\equiv 10^5$ (Pa)
1 (Pa) = 10 (dyn/cm²)
1 cal $= 2.6118 \times 10^{19}$ (eV)
1 (horsepower) = 746 (W)
1 (KWH) = 3.6 (MJ)

1 (mm) (milli) $= 10^{-3}$ (m)	1 km (Kilo) $= 10^3$ m
1 (μm) (micro) $= 10^{-6}$ (m)	1 Mm (Mega) $= 10^6$ m
1 (nm) (nano) $= 10^{-9}$ (m)	1 Gm (Giga) $= 10^9$ m
1 (pm) (pico) $= 10^{-12}$ (m)	1 Tm (Tera) $= 10^{12}$ m
1 (fm) (femto) $= 10^{-15}$ (m)	1 Pm (Peta) $= 10^{15}$ m
1 (am) (atto) $= 10^{-18}$ (m)	1 Em (Exa) $= 10^{18}$ m