# Common Physical Constants

| Name | Symbol | Value |
|---|---|---|
| Speed of light | c | 299792458 $m \cdot s^{-1}$ |
| Charge of an electron | e | $1.602176565(35) \times 10^{-19}$ C |
| Universal gravitational constant | G | $6.67384(80) \times 10^{-11}$ $N \cdot m^2/kg^2$ |
| Planck's constant | $h$ | $6.626070040(81) \times 10^{-34}$ J·s |
| | $h$ | $4.135667662(25) \times 10^{-15}$ eV·s |
| Dirac's constant | $\hbar$ | $1.054571800(13) \times 10^{-34}$ J·s |
| | $\hbar$ | $6.582119514(40) \times 10^{-16}$ eV·s |
| Boltzmann's constant | k | $1.3806488(13) \times 10^{-23}$ $J \cdot K^{-1}$ |
| | | $8.6173324(78) \times 10^{-5}$ $eV \cdot K^{-1}$ |
| Avogadro's constant | $N_A$ | $6.022140857(74) \times 10^{23}$ $mol^{-1}$ |
| Faraday's constant | F | 96485.3365(21) $C \cdot mol^{-1}$ |
| Ideal gas constant | R | 8.3144621(75) $J \cdot K^{-1} \cdot mol^{-1}$ |
| Mass of an electron | $m_e$ | $9.10938291(40) \times 10^{-31}$ kg |
| | | 0.510998928(11) $MeV/c^2$ |
| Mass of a proton | $m_p$ | $1.672621777(74) \times 10^{-27}$ kg |
| | | 938.272046(21) $MeV/c^2$ |
| Mass of a neutron | $m_n$ | $1.674927351(74) \times 10^{-27}$ kg |
| | | 939.565378(21) $MeV/c^2$ |
| Atomic mass unit | u, amu or Da | $1.660538921(73) \times 10^{-27}$ kg |
| | | 931.494061(21) $MeV/c^2$ |
| Permittivity of free space | $\varepsilon_0$ | $8.854187817 \times 10^{-12}$ $C^2/N \cdot m^2$ |
| Coulomb's constant | $\frac{1}{4\pi\varepsilon_0}$ | $8.9875517973681764 \times 10^9$ $N \cdot m^2 \cdot C^{-2}$ |
| Permeability of free space | $\mu_0$ | $4\pi \times 10^{-7}$ $N \cdot A^{-2}$ |
| Rydberg constant | $R_\infty$ | $1.0973731568539(55) \times 10^{-7}$ $m^{-1}$ |
| Bohr radius | $a_0$ | $5.2917721092(17) \times 10^{-11}$ m |

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