

Useful Physical Constants and Materials Properties

Physical Constants

Constant	Symbol	Value	Units
Avogadro's number	N_A	6.022×10^{23}	Mole ⁻¹ (M ⁻¹)
Boltzmann's constant	k_B	1.381×10^{-23}	Joule/Kelvin (J/K)
Electron charge	q	1.602×10^{-19}	Coulomb (C)
Electron rest mass	m_0	9.11×10^{-31}	kg
Electron volt	eV	1.602×10^{-19}	Joules (J)
Fine structure constant	α	0.0073	
Gyromagnetic ratio of electron	g_e	2.002	
Permittivity of free space	ϵ_0	8.85×10^{-14}	Farad/cm (F/cm)
Planck's constant	h	6.626×10^{-34}	Joule-s (J-s)
Reduced Planck's constant	\hbar	1.054×10^{-34}	J-s
Speed of light in vacuum	c	2.998×10^{10}	cm/s