

Values of Selected Physical Constants

Constant	Symbol	Value
Atomic mass constant	amu	$1.660\,5402 \times 10^{-27}$ kg
Avogadro's constant	N_A	$6.022\,1367 \times 10^{23}$ mol ⁻¹
Bohr magneton	$\mu_B = e\hbar/2m_e$	$9.274\,0154 \times 10^{-24}$ J T ⁻¹
Bohr radius	$a_0 = 4\pi\epsilon_0\hbar^2/m_e e^2$	$5.291\,772\,49 \times 10^{-11}$ m
Boltzmann constant	k_B	$1.380\,658 \times 10^{-23}$ J K ⁻¹ $0.695\,038$ cm ⁻¹
Electron rest mass	m_e	$9.109\,3897 \times 10^{-31}$ kg
Faraday constant	F	9.6485309×10^4 C mol ⁻¹
Gravitational constant	G	$6.672\,59 \times 10^{-11}$ m ³ kg ⁻¹ s ⁻²
Standard acceleration of gravity	G_n	9.80665 m s ⁻²
Molar gas constant	R	8.3145101 J K ⁻¹ mol ⁻¹ $0.083\,1451$ dm ³ bar K ⁻¹ mol ⁻¹ $0.082\,0578$ dm ³ atm K ⁻¹ mol ⁻¹
Molar volume, ideal gas (1 bar, 0°C)		$22.711\,08$ L mol ⁻¹
(1 atm, 0°C)		$22.414\,09$ L mol ⁻¹
Nuclear magneton	$\mu_N = e\hbar/2m_p$	$5.050\,7866 \times 10^{-27}$ J T ⁻¹
Permittivity of vacuum	ϵ_0	$8.854\,187\,816 \times 10^{-12}$ C ² J ⁻¹ m ⁻¹
Planck constant	h	$6.626\,0755 \times 10^{-34}$ J s
	\hbar	$1.054\,572\,66 \times 10^{-34}$ J s
Proton charge	e	$1.602\,177\,33 \times 10^{-19}$ C
Proton magnetogyric ratio	γ_p	$2.675\,221\,28 \times 10^8$ s ⁻¹ T ⁻¹
Proton rest mass	m_p	$1.672\,6231 \times 10^{-27}$ kg
Rydberg constant	$R_\infty = m_e e^4/8\epsilon_0^2 h^2$	$2.179\,8736 \times 10^{-18}$ J $109\,73731.534$ m ⁻¹
Rydberg constant for H	R_H	109677.581 cm ⁻¹
Speed of light in vacuum	c	$2.99\,792\,458 \times 10^8$ m s ⁻¹
Stefan-Boltzmann constant	$\sigma = 2\pi^5 k_B^4/15h^3 c^2$	$5.670\,51 \times 10^{-8}$ J m ⁻² K ⁻⁴ s ⁻¹

SI Prefixes

Fraction	Prefix	Symbol	Fraction	Prefix	Symbol
10^{-1}	deci	d	10	deca	da
10^{-2}	centi	c	10^2	hecto	h
10^{-3}	milli	m	10^3	kilo	k
10^{-6}	micro	μ	10^6	mega	M
10^{-9}	nano	n	10^9	giga	G
10^{-12}	pico	p	10^{12}	tera	T
10^{-15}	femto	f	10^{15}	peta	P
10^{-18}	atto	a	10^{18}	exa	E