

## Physical Constants

Name	Symbol	Value	Units	Uncertainty
Speed of light in vacuum	$c$	299 792 458	$\text{m s}^{-1}$	exact
Newtonian constant of Gravitation	$G$	$6.673\ 84 \times 10^{-11}$	$\text{kg}^{-1}\ \text{m}^3\ \text{s}^{-2}$	$0.000\ 80 \times 10^{-11}$
Planck constant	$h$	$6.626\ 069\ 57 \times 10^{-34}$	J s	$0.000\ 000\ 29 \times 10^{-34}$
Planck constant over $2\pi$	$\hbar=h/2\pi$	$1.054\ 571\ 726 \times 10^{-34}$	J s	$0.000\ 000\ 047 \times 10^{-34}$
Electric constant	$\epsilon_0$	$8.854\ 187\ 817 \times 10^{-12}$	$\text{C}^2\ \text{N}^{-1}\ \text{m}^{-2}$	exact
Magnetic constant	$\mu_0$	$4\pi \times 10^{-7}$	$\text{N A}^{-2}$	exact
Boltzmann constant	$k$	$1.380\ 6488 \times 10^{-23}$	$\text{J K}^{-1}$	$0.000\ 0013 \times 10^{-23}$
Stefan-Boltzmann constant	$\sigma$	$5.670\ 373 \times 10^{-8}$	$\text{W m}^{-2}\ \text{K}^{-4}$	$0.000\ 021 \times 10^{-8}$
Thomson cross section	$\sigma_e$	$0.665\ 245\ 8734 \times 10^{-28}$	$\text{m}^2$	$0.000\ 000\ 0013 \times 10^{-28}$
Electron mass	$m_e$	$9.109\ 382\ 91 \times 10^{-31}$	kg	$0.000\ 000\ 40 \times 10^{-31}$
Classical electron radius	$r_e$	$2.817\ 940\ 3267 \times 10^{-15}$	m	$0.000\ 000\ 0027 \times 10^{-15}$
Elementary charge	$e$	$1.602\ 176\ 565 \times 10^{-19}$	C	$0.000\ 000\ 035 \times 10^{-19}$
Proton mass	$m_p$	$1.672\ 621\ 777 \times 10^{-27}$	kg	$0.000\ 000\ 074 \times 10^{-27}$
Rydberg Constant	$R_\infty$	10 973 731.568 539	$\text{m}^{-1}$	$0.000\ 055\ \text{m}^{-1}$

Source: NIST Physical Measurement Laboratory ([physics.nist.gov/cuu/Constants](https://physics.nist.gov/cuu/Constants))

## SI prefixes

Factor	Name	Sym	Factor	Name	Sym
$10^{24}$	yotta	Y	$10^{-1}$	deci	d
$10^{21}$	zetta	Z	$10^{-2}$	centi	c
$10^{18}$	exa	E	$10^{-3}$	milli	m
$10^{15}$	peta	P	$10^{-6}$	micro	$\mu$
$10^{12}$	tera	T	$10^{-9}$	nano	n
$10^9$	giga	G	$10^{-12}$	pico	p
$10^6$	mega	M	$10^{-15}$	femto	f
$10^3$	kilo	k	$10^{-18}$	atto	a
$10^2$	hecto	h	$10^{-21}$	zepto	z
$10^1$	deka	da	$10^{-24}$	yocto	y

Source: NIST ([physics.nist.gov/cuu/Units/prefixes.html](https://physics.nist.gov/cuu/Units/prefixes.html))