Quantity	Symbol, equation	Value	Uncert. (ppm)
speed of light in vacuum	c	299 792 458 m s^{-1}	exact*
Planck constant	h	$6.626\ 075\ 5(40)\times10^{-34}$ J s	0.60
Planck constant, reduced	$\hbar \equiv h/2\pi$	$1.054\ 572\ 66(63)\times10^{-34}$ J s	0.60
		$= 6.582\ 122\ 0(20)\times10^{-22}$ MeV s	0.30
electron charge magnitude	e	$1.602\ 177\ 33(49)\times10^{-19}$ C $= 4.803\ 206\ 8(15)\times10^{-10}$ esu	0.30, 0.30
conversion constant	$\hbar c$	197.327 053(59) MeV fm	0.30
conversion constant	$(\hbar c)^2$	0.389 379 66(23) GeV^2 mbarn	0.59
electron mass	m_e	0.510 999 06(15) MeV/c^2 $= 9.109\ 389\ 7(54)\times10^{-31}$ kg	0.30, 0.59
proton mass	m_p	938.272 31(28) MeV/c^2 $= 1.672\ 623\ 1(10)\times10^{-27}$ kg	0.30, 0.59
		$= 1.007\ 276\ 470(12)$ u $= 1836.152\ 701(37)\ m_e$	0.012, 0.020
deuteron mass	m_d	1875.613 39(57) MeV/c^2	0.30
unified atomic mass unit (u)	(mass ^{12}C atom)/12 = (1 g)/(N_A mol)	931.494 32(28) MeV/c^2 $= 1.660\ 540\ 2(10)\times10^{-27}$ kg	0.30, 0.59
permittivity of free space	ϵ_0	8.854 187 817 ... $\times10^{-12}$ F m^{-1}	exact
permeability of free space	μ_0 $\}$ $\epsilon_0\mu_0 = 1/c^2$	$4\pi \times 10^{-7}$ N A^{-2} $= 12.566\ 370\ 614\ldots\times10^{-7}$ N A^{-2}	exact
fine-structure constant	$\alpha = e^2/4\pi\epsilon_0\hbar c$	$1/137.035\ 989\ 5(61)^\dagger$	0.045
classical electron radius	$r_e = e^2/4\pi\epsilon_0 m_e c^2$	$2.817\ 940\ 92(38)\times10^{-15}$ m	0.13
electron Compton wavelength	$\lambda\!\!\!^{-}_e = \hbar/m_e c = r_e\alpha^{-1}$	$3.861\ 593\ 23(35)\times10^{-13}$ m	0.089
Bohr radius ($m_{\rm nucleus} = \infty$)	$a_\infty = 4\pi\epsilon_0\hbar^2/m_e e^2 = r_e\alpha^{-2}$	$0.529\ 177\ 249(24)\times10^{-10}$ m	0.045
wavelength of 1 eV/c particle	hc/e	$1.239\ 842\ 44(37)\times10^{-6}$ m	0.30
Rydberg energy	$hcR_\infty = m_e e^4/2(4\pi\epsilon_0)^2\hbar^2 = m_e c^2\alpha^2/2$	13.605 698 1(40) eV	0.30
Thomson cross section	$\sigma_T = 8\pi r_e^2/3$	0.665 246 16(18) barn	0.27
Bohr magneton	$\mu_B = e\hbar/2m_e$	$5.788\ 382\ 63(52)\times10^{-11}$ MeV T^{-1}	0.089
nuclear magneton	$\mu_N = e\hbar/2m_p$	$3.152\ 451\ 66(28)\times10^{-14}$ MeV T^{-1}	0.089
electron cyclotron freq./field	$\omega^e_{\rm cycl}/B = e/m_e$	$1.758\ 819\ 62(53)\times10^{11}$ rad s^{-1} T^{-1}	0.30
proton cyclotron freq./field	$\omega^p_{\rm cycl}/B = e/m_p$	$9.578\ 830\ 9(29)\times10^{7}$ rad s^{-1} T^{-1}	0.30
gravitational constant‡	G_N	$6.672\ 59(85)\times10^{-11}$ m^3 kg^{-1} s^{-2}	128
		$= 6.707\ 11(86)\times10^{-39}$ $\hbar c$ $(\mathrm{GeV}/c^2)^{-2}$	128
standard grav. accel., sea level	g	9.806 65 m s^{-2}	exact
Avogadro constant	N_A	$6.022\ 136\ 7(36)\times10^{23}$ mol^{-1}	0.59
Boltzmann constant	k	$1.380\ 658(12)\times10^{-23}$ J K^{-1}	8.5
		$= 8.617\ 385(73)\times10^{-5}$ eV K^{-1}	8.4
molar volume, ideal gas at STP	$N_A k(273.15\ \mathrm{K})/(101\ 325\ \mathrm{Pa})$	$22.414\ 10(19)\times10^{-3}$ m^3 mol^{-1}	8.4
Wien displacement law constant	$b = \lambda_{\rm max}T$	$2.897\ 756(24)\times10^{-3}$ m K	8.4
Stefan-Boltzmann constant	$\sigma = \pi^2k^4/60\hbar^3c^2$	$5.670\ 51(19)\times10^{-8}$ W m^{-2} K^{-4}	34
Fermi coupling constant**	$G_F/(\hbar c)^3$	$1.166\ 39(1)\times10^{-5}$ GeV^{-2}	9
weak mixing angle	$\sin^2\widehat{\theta}(M_Z)$ $(\overline{\rm MS})$	0.23124(24)	1000
$W^\pm$ boson mass	m_W	80.41(10) GeV/c^2	1200
Z^0 boson mass	m_Z	91.187(7) GeV/c^2	77
strong coupling constant	$\alpha_s(m_Z)$	0.119(2)	17000

$\pi = 3.141\ 592\ 653\ 589\ 793\ 238$ $\quad e = 2.718\ 281\ 828\ 459\ 045\ 235$ $\quad \gamma = 0.577\ 215\ 664\ 901\ 532\ 861$

1 in $\equiv$ 0.0254 m	1 G $\equiv 10^{-4}$ T	1 eV $= 1.602\ 177\ 33(49)\times10^{-19}$ J	kT at 300 K $= [38.681\ 49(33)]^{-1}$ eV	
1 Å $\equiv 10^{-10}$ m	1 dyne $\equiv 10^{-5}$ N	1 eV/c^2 $= 1.782\ 662\ 70(54)\times10^{-36}$ kg	0 °C $\equiv$ 273.15 K	
1 barn $\equiv 10^{-28}$ m^2	1 erg $\equiv 10^{-7}$ J	$2.997\ 924\ 58\times10^9$ esu = 1 C	1 atmosphere $\equiv$ 760 torr $\equiv$ 101 325 Pa	

* The meter is the length of the path traveled by light in vacuum during a time interval of 1/299 792 458 of a second.

† At $Q^2 = 0$. At $Q^2 \approx m_W^2$ the value is approximately 1/128.

‡ Absolute lab measurements of G_N have been performed only on scales of $10^{-1\pm1}$ m.

** See discussion in Sec. 10 "Electroweak model and constraints on new physics."