Fundamental Physical Constants — Non-SI units

Quantity	Symbol	Value	Unit	Relative std. uncert. u_r
electron volt: (e/C) J	eV	$1.602\,176\,462(63) \times 10^{-19}$	J	3.9×10^{-8}
(unified) atomic mass unit: 1 u $= m_u = \frac{1}{12}m(^{12}\mathrm{C})$ $= 10^{-3}$ kg mol$^{-1}/N_A$	u	$1.660\,538\,73(13) \times 10^{-27}$	kg	7.9×10^{-8}
		Natural units (n.u.)		
n.u. of velocity:				
speed of light in vacuum	c, c_0	299 792 458	m s^{-1}	(exact)
n.u. of action:				
reduced Planck constant $(h/2\pi)$	$\hbar$	$1.054\,571\,596(82) \times 10^{-34}$	J s	7.8×10^{-8}
in eV s		$6.582\,118\,89(26) \times 10^{-16}$	eV s	3.9×10^{-8}
n.u. of mass:				
electron mass	m_e	$9.109\,381\,88(72) \times 10^{-31}$	kg	7.9×10^{-8}
n.u. of energy	$m_e c^2$	$8.187\,104\,14(64) \times 10^{-14}$	J	7.9×10^{-8}
in MeV		$0.510\,998\,902(21)$	MeV	4.0×10^{-8}
n.u. of momentum	$m_e c$	$2.730\,923\,98(21) \times 10^{-22}$	kg m s^{-1}	7.9×10^{-8}
in MeV/c		$0.510\,998\,902(21)$	MeV/c	4.0×10^{-8}
n.u. of length $(\hbar/m_e c)$	$\lambda\!\!\!^{-}_C$	$386.159\,2642(28) \times 10^{-15}$	m	7.3×10^{-9}
n.u. of time	$\hbar/m_e c^2$	$1.288\,088\,6555(95) \times 10^{-21}$	s	7.3×10^{-9}
		Atomic units (a.u.)		
a.u. of charge:				
elementary charge	e	$1.602\,176\,462(63) \times 10^{-19}$	C	3.9×10^{-8}
a.u. of mass:				
electron mass	m_e	$9.109\,381\,88(72) \times 10^{-31}$	kg	7.9×10^{-8}
a.u. of action:				
reduced Planck constant $(h/2\pi)$	$\hbar$	$1.054\,571\,596(82) \times 10^{-34}$	J s	7.8×10^{-8}
a.u. of length:				
Bohr radius (bohr) $(\alpha/4\pi R_\infty)$	a_0	$0.529\,177\,2083(19) \times 10^{-10}$	m	3.7×10^{-9}
a.u. of energy:				
Hartree energy (hartree) $(e^2/4\pi\epsilon_0 a_0 = 2R_\infty hc = \alpha^2 m_e c^2)$	E_h	$4.359\,743\,81(34) \times 10^{-18}$	J	7.8×10^{-8}
a.u. of time	$\hbar/E_h$	$2.418\,884\,326\,500(18) \times 10^{-17}$	s	7.6×10^{-12}
a.u. of force	E_h/a_0	$8.238\,721\,81(64) \times 10^{-8}$	N	7.8×10^{-8}
a.u. of velocity (αc)	$a_0 E_h/\hbar$	$2.187\,691\,2529(80) \times 10^{6}$	m s^{-1}	3.7×10^{-9}
a.u. of momentum	$\hbar/a_0$	$1.992\,851\,51(16) \times 10^{-24}$	kg m s^{-1}	7.8×10^{-8}
a.u. of current	$eE_h/\hbar$	$6.623\,617\,53(26) \times 10^{-3}$	A	3.9×10^{-8}
a.u. of charge density	e/a_0^3	$1.081\,202\,285(43) \times 10^{12}$	C m^{-3}	4.0×10^{-8}
a.u. of electric potential	E_h/e	$27.211\,3834(11)$	V	3.9×10^{-8}
a.u. of electric field	E_h/ea_0	$5.142\,206\,24(20) \times 10^{11}$	V m^{-1}	3.9×10^{-8}
a.u. of electric field gradient	E_h/ea_0^2	$9.717\,361\,53(39) \times 10^{21}$	V m^{-2}	4.0×10^{-8}
a.u. of electric dipole moment	ea_0	$8.478\,352\,67(33) \times 10^{-30}$	C m	3.9×10^{-8}
a.u. of electric quadrupole moment	ea_0^2	$4.486\,551\,00(18) \times 10^{-40}$	C m^2	4.0×10^{-8}

Source: Peter J. Mohr and Barry N. Taylor, CODATA Recommended Values of the Fundamental Physical Constants: 1998, Reviews of Modern Physics 72, 351 (2000).

Fundamental Physical Constants — Non-SI units

Quantity	Symbol	Value	Unit	Relative std. uncert. $u_{\rm r}$
a.u. of electric polarizability	$e^2a_0^2/E_{\rm h}$	$1.648\,777\,251(18) \times 10^{-41}$	$C^2\ m^2\ J^{-1}$	1.1×10^{-8}
a.u. of 1st hyperpolarizability	$e^3a_0^3/E_{\rm h}^2$	$3.206\,361\,57(14) \times 10^{-53}$	$C^3\ m^3\ J^{-2}$	4.2×10^{-8}
a.u. of 2nd hyperpolarizability	$e^4a_0^4/E_{\rm h}^3$	$6.235\,381\,12(51) \times 10^{-65}$	$C^4\ m^4\ J^{-3}$	8.1×10^{-8}
a.u. of magnetic flux density	$\hbar/ea_0^2$	$2.350\,517\,349(94) \times 10^{5}$	T	4.0×10^{-8}
a.u. of magnetic dipole moment ($2\mu_{\rm B}$)	$\hbar e/m_{\rm e}$	$1.854\,801\,799(75) \times 10^{-23}$	$J\ T^{-1}$	4.0×10^{-8}
a.u. of magnetizability	$e^2a_0^2/m_{\rm e}$	$7.891\,036\,41(14) \times 10^{-29}$	$J\ T^{-2}$	1.8×10^{-8}
a.u. of permittivity $(10^7/c^2)$	$e^2/a_0E_{\rm h}$	$1.112\,650\,056... \times 10^{-10}$	$F\ m^{-1}$	(exact)

Source: Peter J. Mohr and Barry N. Taylor, CODATA Recommended Values of the Fundamental Physical Constants: 1998, Reviews of Modern Physics 72, 351 (2000).