Fundamental Physical Constants — Non-SI units

Quantity	Symbol	Value	Unit	Relative std. uncert. u_r
electron volt: (e/C) J	eV	$1.602\,176\,6208(98) \times 10^{-19}$	J	6.1×10^{-9}
(unified) atomic mass unit: $\frac{1}{12}m(^{12}\mathrm{C})$	u	$1.660\,539\,040(20) \times 10^{-27}$	kg	1.2×10^{-8}
		Natural units (n.u.)		
n.u. of velocity	c, c_0	299 792 458	m s^{-1}	exact
n.u. of action: $h/2\pi$	$\hbar$	$1.054\,571\,800(13) \times 10^{-34}$	J s	1.2×10^{-8}
		$6.582\,119\,514(40) \times 10^{-16}$	eV s	6.1×10^{-9}
	$\hbar c$	197.326 9788(12)	MeV fm	6.1×10^{-9}
n.u. of mass	m_e	$9.109\,383\,56(11) \times 10^{-31}$	kg	1.2×10^{-8}
n.u. of energy	$m_e c^2$	$8.187\,105\,65(10) \times 10^{-14}$	J	1.2×10^{-8}
		0.510 998 9461(31)	MeV	6.2×10^{-9}
n.u. of momentum	$m_e c$	$2.730\,924\,488(34) \times 10^{-22}$	kg m s^{-1}	1.2×10^{-8}
		0.510 998 9461(31)	MeV/c	6.2×10^{-9}
n.u. of length: $\hbar/m_e c$	$\lambda\!\!\!^{-}_C$	$386.159\,267\,64(18) \times 10^{-15}$	m	4.5×10^{-10}
n.u. of time	$\hbar/m_e c^2$	$1.288\,088\,667\,12(58) \times 10^{-21}$	s	4.5×10^{-10}
		Atomic units (a.u.)		
a.u. of charge	e	$1.602\,176\,6208(98) \times 10^{-19}$	C	6.1×10^{-9}
a.u. of mass	m_e	$9.109\,383\,56(11) \times 10^{-31}$	kg	1.2×10^{-8}
a.u. of action: $h/2\pi$	$\hbar$	$1.054\,571\,800(13) \times 10^{-34}$	J s	1.2×10^{-8}
a.u. of length: Bohr radius (bohr) $\alpha/4\pi R_\infty$	a_0	$0.529\,177\,210\,67(12) \times 10^{-10}$	m	2.3×10^{-10}
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	$4.359\,744\,650(54) \times 10^{-18}$	J	1.2×10^{-8}
a.u. of time	$\hbar/E_h$	$2.418\,884\,326\,509(14) \times 10^{-17}$	s	5.9×10^{-12}
a.u. of force	E_h/a_0	$8.238\,723\,36(10) \times 10^{-8}$	N	1.2×10^{-8}
a.u. of velocity: αc	$a_0 E_h/\hbar$	$2.187\,691\,262\,77(50) \times 10^{6}$	m s^{-1}	2.3×10^{-10}
a.u. of momentum	$\hbar/a_0$	$1.992\,851\,882(24) \times 10^{-24}$	kg m s^{-1}	1.2×10^{-8}
a.u. of current	$eE_h/\hbar$	$6.623\,618\,183(41) \times 10^{-3}$	A	6.1×10^{-9}
a.u. of charge density	e/a_0^3	$1.081\,202\,3770(67) \times 10^{12}$	C m^{-3}	6.2×10^{-9}
a.u. of electric potential	E_h/e	27.211 386 02(17)	V	6.1×10^{-9}
a.u. of electric field	E_h/ea_0	$5.142\,206\,707(32) \times 10^{11}$	V m^{-1}	6.1×10^{-9}
a.u. of electric field gradient	E_h/ea_0^2	$9.717\,362\,356(60) \times 10^{21}$	V m^{-2}	6.2×10^{-9}
a.u. of electric dipole moment	ea_0	$8.478\,353\,552(52) \times 10^{-30}$	C m	6.2×10^{-9}
a.u. of electric quadrupole moment	ea_0^2	$4.486\,551\,484(28) \times 10^{-40}$	C m^2	6.2×10^{-9}
a.u. of electric polarizability	$e^2a_0^2/E_h$	$1.648\,777\,2731(11) \times 10^{-41}$	C^2 m^2 J^{-1}	6.8×10^{-10}
a.u. of 1st hyperpolarizability	$e^3a_0^3/E_h^2$	$3.206\,361\,329(20) \times 10^{-53}$	C^3 m^3 J^{-2}	6.2×10^{-9}
a.u. of 2nd hyperpolarizability	$e^4a_0^4/E_h^3$	$6.235\,380\,085(77) \times 10^{-65}$	C^4 m^4 J^{-3}	1.2×10^{-8}
a.u. of magnetic flux density	$\hbar/ea_0^2$	$2.350\,517\,550(14) \times 10^{5}$	T	6.2×10^{-9}
a.u. of magnetic dipole moment: $2\mu_B$	$\hbar e/m_e$	$1.854\,801\,999(11) \times 10^{-23}$	J T^{-1}	6.2×10^{-9}
a.u. of magnetizability	$e^2a_0^2/m_e$	$7.891\,036\,5886(90) \times 10^{-29}$	J T^{-2}	1.1×10^{-9}
a.u. of permittivity: $10^7/c^2$	e^2/a_0E_h	$1.112\,650\,056\ldots \times 10^{-10}$	F m^{-1}	exact