Fundamental Physical Constants — Atomic and Nuclear Constants

Quantity	Symbol	Value	Unit	Relative std. uncert. u_{r}
		General		
fine-structure constant $e^2/4\pi\epsilon_0\hbar c$	α	$7.297\,352\,5698(24) \times 10^{-3}$		3.2×10^{-10}
inverse fine-structure constant	α^{-1}	$137.035\,999\,074(44)$		3.2×10^{-10}
Rydberg constant $\alpha^2 m_{\mathrm{e}}c/2h$	R_∞	$10\,973\,731.568\,539(55)$	m^{-1}	5.0×10^{-12}
	$R_\infty c$	$3.289\,841\,960\,364(17) \times 10^{15}$	Hz	5.0×10^{-12}
	$R_\infty hc$	$2.179\,872\,171(96) \times 10^{-18}$	J	4.4×10^{-8}
		$13.605\,692\,53(30)$	eV	2.2×10^{-8}
Bohr radius $\alpha/4\pi R_\infty = 4\pi\epsilon_0\hbar^2/m_{\mathrm{e}}e^2$	a_0	$0.529\,177\,210\,92(17) \times 10^{-10}$	m	3.2×10^{-10}
Hartree energy $e^2/4\pi\epsilon_0 a_0 = 2R_\infty hc = \alpha^2 m_{\mathrm{e}}c^2$	E_{h}	$4.359\,744\,34(19) \times 10^{-18}$	J	4.4×10^{-8}
		$27.211\,385\,05(60)$	eV	2.2×10^{-8}
quantum of circulation	$h/2m_{\mathrm{e}}$	$3.636\,947\,5520(24) \times 10^{-4}$	$\mathrm{m^2\ s^{-1}}$	6.5×10^{-10}
	h/m_{e}	$7.273\,895\,1040(47) \times 10^{-4}$	$\mathrm{m^2\ s^{-1}}$	6.5×10^{-10}
		Electroweak		
Fermi coupling constant[1]	$G_{\mathrm{F}}/(\hbar c)^3$	$1.166\,364(5) \times 10^{-5}$	GeV^{-2}	4.3×10^{-6}
weak mixing angle[2] θ_{W} (on-shell scheme)				
$\sin^2\theta_{\mathrm{W}} = s^2_{\mathrm{W}} \equiv 1 - (m_{\mathrm{W}}/m_{\mathrm{Z}})^2$	$\sin^2\theta_{\mathrm{W}}$	$0.2223(21)$		9.5×10^{-3}
		Electron, e^-		
electron mass	m_{e}	$9.109\,382\,91(40) \times 10^{-31}$	kg	4.4×10^{-8}
		$5.485\,799\,0946(22) \times 10^{-4}$	u	4.0×10^{-10}
energy equivalent	$m_{\mathrm{e}}c^2$	$8.187\,105\,06(36) \times 10^{-14}$	J	4.4×10^{-8}
		$0.510\,998\,928(11)$	MeV	2.2×10^{-8}
electron-muon mass ratio	m_{e}/m_μ	$4.836\,331\,66(12) \times 10^{-3}$		2.5×10^{-8}
electron-tau mass ratio	m_{e}/m_τ	$2.875\,92(26) \times 10^{-4}$		9.0×10^{-5}
electron-proton mass ratio	$m_{\mathrm{e}}/m_{\mathrm{p}}$	$5.446\,170\,2178(22) \times 10^{-4}$		4.1×10^{-10}
electron-neutron mass ratio	$m_{\mathrm{e}}/m_{\mathrm{n}}$	$5.438\,673\,4461(32) \times 10^{-4}$		5.8×10^{-10}
electron-deuteron mass ratio	$m_{\mathrm{e}}/m_{\mathrm{d}}$	$2.724\,437\,1095(11) \times 10^{-4}$		4.0×10^{-10}
electron-triton mass ratio	$m_{\mathrm{e}}/m_{\mathrm{t}}$	$1.819\,200\,0653(17) \times 10^{-4}$		9.1×10^{-10}
electron-helion mass ratio	$m_{\mathrm{e}}/m_{\mathrm{h}}$	$1.819\,543\,0761(17) \times 10^{-4}$		9.2×10^{-10}
electron to alpha particle mass ratio	m_{e}/m_α	$1.370\,933\,555\,78(55) \times 10^{-4}$		4.0×10^{-10}
electron charge to mass quotient	$-e/m_{\mathrm{e}}$	$-1.758\,820\,088(39) \times 10^{11}$	$\mathrm{C\ kg^{-1}}$	2.2×10^{-8}
electron molar mass $N_{\mathrm{A}}m_{\mathrm{e}}$	$M(\mathrm{e}), M_{\mathrm{e}}$	$5.485\,799\,0946(22) \times 10^{-7}$	$\mathrm{kg\ mol^{-1}}$	4.0×10^{-10}
Compton wavelength $h/m_{\mathrm{e}}c$	λ_{C}	$2.426\,310\,2389(16) \times 10^{-12}$	m	6.5×10^{-10}
$\lambda_{\mathrm{C}}/2\pi = \alpha a_0 = \alpha^2/4\pi R_\infty$	$\bar{\lambda}_{\mathrm{C}}$	$386.159\,268\,00(25) \times 10^{-15}$	m	6.5×10^{-10}
classical electron radius $\alpha^2 a_0$	r_{e}	$2.817\,940\,3267(27) \times 10^{-15}$	m	9.7×10^{-10}
Thomson cross section $(8\pi/3)r^2_{\mathrm{e}}$	σ_{e}	$0.665\,245\,8734(13) \times 10^{-28}$	m^2	1.9×10^{-9}
electron magnetic moment	μ_{e}	$-928.476\,430(21) \times 10^{-26}$	$\mathrm{J\ T^{-1}}$	2.2×10^{-8}
to Bohr magneton ratio	$\mu_{\mathrm{e}}/\mu_{\mathrm{B}}$	$-1.001\,159\,652\,180\,76(27)$		2.6×10^{-13}
to nuclear magneton ratio	$\mu_{\mathrm{e}}/\mu_{\mathrm{N}}$	$-1838.281\,970\,90(75)$		4.1×10^{-10}
electron magnetic moment				
anomaly $\lvert\mu_{\mathrm{e}}\rvert/\mu_{\mathrm{B}} - 1$	a_{e}	$1.159\,652\,180\,76(27) \times 10^{-3}$		2.3×10^{-10}
electron g-factor $-2(1 + a_{\mathrm{e}})$	g_{e}	$-2.002\,319\,304\,361\,53(53)$		2.6×10^{-13}
electron-muon magnetic moment ratio	μ_{e}/μ_μ	$206.766\,9896(52)$		2.5×10^{-8}
electron-proton magnetic moment ratio	$\mu_{\mathrm{e}}/\mu_{\mathrm{p}}$	$-658.210\,6848(54)$		8.1×10^{-9}
electron to shielded proton magnetic				
moment ratio (H_2O, sphere, 25 °C)	$\mu_{\mathrm{e}}/\mu'_{\mathrm{p}}$	$-658.227\,5971(72)$		1.1×10^{-8}
electron-neutron magnetic moment ratio	$\mu_{\mathrm{e}}/\mu_{\mathrm{n}}$	$960.920\,50(23)$		2.4×10^{-7}
electron-deuteron magnetic moment ratio	$\mu_{\mathrm{e}}/\mu_{\mathrm{d}}$	$-2143.923\,498(18)$		8.4×10^{-9}
electron to shielded helion magnetic				

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moment ratio (gas, sphere, 25 °C)	μ_e/μ'_h	864.058 257(10)		1.2×10^{-8}
electron gyromagnetic ratio $2\|\mu_e\|/\hbar$	γ_e	$1.760\,859\,708(39) \times 10^{11}$	$s^{-1}\,T^{-1}$	2.2×10^{-8}
	$\gamma_e/2\pi$	28 024.952 66(62)	MHz T^{-1}	2.2×10^{-8}
		Muon, μ^-		
muon mass	m_μ	$1.883\,531\,475(96) \times 10^{-28}$	kg	5.1×10^{-8}
		0.113 428 9267(29)	u	2.5×10^{-8}
energy equivalent	$m_\mu c^2$	$1.692\,833\,667(86) \times 10^{-11}$	J	5.1×10^{-8}
		105.658 3715(35)	MeV	3.4×10^{-8}
muon-electron mass ratio	m_μ/m_e	206.768 2843(52)		2.5×10^{-8}
muon-tau mass ratio	m_μ/m_τ	$5.946\,49(54) \times 10^{-2}$		9.0×10^{-5}
muon-proton mass ratio	m_μ/m_p	0.112 609 5272(28)		2.5×10^{-8}
muon-neutron mass ratio	m_μ/m_n	0.112 454 5177(28)		2.5×10^{-8}
muon molar mass $N_A m_\mu$	$M(\mu), M_\mu$	$0.113\,428\,9267(29) \times 10^{-3}$	kg mol^{-1}	2.5×10^{-8}
muon Compton wavelength $h/m_\mu c$	$\lambda_{C,\mu}$	$11.734\,441\,03(30) \times 10^{-15}$	m	2.5×10^{-8}
$\lambda_{C,\mu}/2\pi$	$\bar{\lambda}_{C,\mu}$	$1.867\,594\,294(47) \times 10^{-15}$	m	2.5×10^{-8}
muon magnetic moment	μ_μ	$-4.490\,448\,07(15) \times 10^{-26}$	J T^{-1}	3.4×10^{-8}
to Bohr magneton ratio	μ_μ/μ_B	$-4.841\,970\,44(12) \times 10^{-3}$		2.5×10^{-8}
to nuclear magneton ratio	μ_μ/μ_N	$-8.890\,596\,97(22)$		2.5×10^{-8}
muon magnetic moment anomaly $\|\mu_\mu\|/(e\hbar/2m_\mu) - 1$	a_μ	$1.165\,920\,91(63) \times 10^{-3}$		5.4×10^{-7}
muon g-factor $-2(1 + a_\mu)$	g_μ	$-2.002\,331\,8418(13)$		6.3×10^{-10}
muon-proton magnetic moment ratio	μ_μ/μ_p	$-3.183\,345\,107(84)$		2.6×10^{-8}
		Tau, τ^-		
tau mass[3]	m_τ	$3.167\,47(29) \times 10^{-27}$	kg	9.0×10^{-5}
		1.907 49(17)	u	9.0×10^{-5}
energy equivalent	$m_\tau c^2$	$2.846\,78(26) \times 10^{-10}$	J	9.0×10^{-5}
		1776.82(16)	MeV	9.0×10^{-5}
tau-electron mass ratio	m_τ/m_e	3477.15(31)		9.0×10^{-5}
tau-muon mass ratio	m_τ/m_μ	16.8167(15)		9.0×10^{-5}
tau-proton mass ratio	m_τ/m_p	1.893 72(17)		9.0×10^{-5}
tau-neutron mass ratio	m_τ/m_n	1.891 11(17)		9.0×10^{-5}
tau molar mass $N_A m_\tau$	$M(\tau), M_\tau$	$1.907\,49(17) \times 10^{-3}$	kg mol^{-1}	9.0×10^{-5}
tau Compton wavelength $h/m_\tau c$	$\lambda_{C,\tau}$	$0.697\,787(63) \times 10^{-15}$	m	9.0×10^{-5}
$\lambda_{C,\tau}/2\pi$	$\bar{\lambda}_{C,\tau}$	$0.111\,056(10) \times 10^{-15}$	m	9.0×10^{-5}
		Proton, p		
proton mass	m_p	$1.672\,621\,777(74) \times 10^{-27}$	kg	4.4×10^{-8}
		1.007 276 466 812(90)	u	8.9×10^{-11}
energy equivalent	$m_p c^2$	$1.503\,277\,484(66) \times 10^{-10}$	J	4.4×10^{-8}
		938.272 046(21)	MeV	2.2×10^{-8}
proton-electron mass ratio	m_p/m_e	1836.152 672 45(75)		4.1×10^{-10}
proton-muon mass ratio	m_p/m_μ	8.880 243 31(22)		2.5×10^{-8}
proton-tau mass ratio	m_p/m_τ	0.528 063(48)		9.0×10^{-5}
proton-neutron mass ratio	m_p/m_n	0.998 623 478 26(45)		4.5×10^{-10}
proton charge to mass quotient	e/m_p	$9.578\,833\,58(21) \times 10^{7}$	C kg^{-1}	2.2×10^{-8}
proton molar mass $N_A m_p$	$M(p), M_p$	$1.007\,276\,466\,812(90) \times 10^{-3}$	kg mol^{-1}	8.9×10^{-11}
proton Compton wavelength $h/m_p c$	$\lambda_{C,p}$	$1.321\,409\,856\,23(94) \times 10^{-15}$	m	7.1×10^{-10}
$\lambda_{C,p}/2\pi$	$\bar{\lambda}_{C,p}$	$0.210\,308\,910\,47(15) \times 10^{-15}$	m	7.1×10^{-10}
proton rms charge radius	r_p	$0.8775(51) \times 10^{-15}$	m	5.9×10^{-3}

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Quantity	Symbol	Value	Unit	Relative std. uncert. u_r
proton magnetic moment	μ_p	$1.410\,606\,743(33) \times 10^{-26}$	J T^{-1}	2.4×10^{-8}
to Bohr magneton ratio	μ_p/μ_B	$1.521\,032\,210(12) \times 10^{-3}$		8.1×10^{-9}
to nuclear magneton ratio	μ_p/μ_N	$2.792\,847\,356(23)$		8.2×10^{-9}
proton g-factor $2\mu_p/\mu_N$	g_p	$5.585\,694\,713(46)$		8.2×10^{-9}
proton-neutron magnetic moment ratio	μ_p/μ_n	$-1.459\,898\,06(34)$		2.4×10^{-7}
shielded proton magnetic moment (H_2O, sphere, 25 °C)	μ'_p	$1.410\,570\,499(35) \times 10^{-26}$	J T^{-1}	2.5×10^{-8}
to Bohr magneton ratio	μ'_p/μ_B	$1.520\,993\,128(17) \times 10^{-3}$		1.1×10^{-8}
to nuclear magneton ratio	μ'_p/μ_N	$2.792\,775\,598(30)$		1.1×10^{-8}
proton magnetic shielding correction $1 - \mu'_p/\mu_p$ (H_2O, sphere, 25 °C)	σ'_p	$25.694(14) \times 10^{-6}$		5.3×10^{-4}
proton gyromagnetic ratio $2\mu_p/\hbar$	γ_p	$2.675\,222\,005(63) \times 10^{8}$	s^{-1} T^{-1}	2.4×10^{-8}
	$\gamma_p/2\pi$	$42.577\,4806(10)$	MHz T^{-1}	2.4×10^{-8}
shielded proton gyromagnetic ratio $2\mu'_p/\hbar$ (H_2O, sphere, 25 °C)	γ'_p	$2.675\,153\,268(66) \times 10^{8}$	s^{-1} T^{-1}	2.5×10^{-8}
	$\gamma'_p/2\pi$	$42.576\,3866(10)$	MHz T^{-1}	2.5×10^{-8}
		Neutron, n		
neutron mass	m_n	$1.674\,927\,351(74) \times 10^{-27}$	kg	4.4×10^{-8}
		$1.008\,664\,916\,00(43)$	u	4.2×10^{-10}
energy equivalent	$m_n c^2$	$1.505\,349\,631(66) \times 10^{-10}$	J	4.4×10^{-8}
		$939.565\,379(21)$	MeV	2.2×10^{-8}
neutron-electron mass ratio	m_n/m_e	$1838.683\,6605(11)$		5.8×10^{-10}
neutron-muon mass ratio	m_n/m_μ	$8.892\,484\,00(22)$		2.5×10^{-8}
neutron-tau mass ratio	m_n/m_τ	$0.528\,790(48)$		9.0×10^{-5}
neutron-proton mass ratio	m_n/m_p	$1.001\,378\,419\,17(45)$		4.5×10^{-10}
neutron-proton mass difference	$m_n - m_p$	$2.305\,573\,92(76) \times 10^{-30}$	kg	3.3×10^{-7}
		$0.001\,388\,449\,19(45)$	u	3.3×10^{-7}
energy equivalent	$(m_n - m_p)c^2$	$2.072\,146\,50(68) \times 10^{-13}$	J	3.3×10^{-7}
		$1.293\,332\,17(42)$	MeV	3.3×10^{-7}
neutron molar mass $N_A m_n$	$M(\mathrm{n}), M_n$	$1.008\,664\,916\,00(43) \times 10^{-3}$	kg mol^{-1}	4.2×10^{-10}
neutron Compton wavelength $h/m_n c$	$\lambda_{C,n}$	$1.319\,590\,9068(11) \times 10^{-15}$	m	8.2×10^{-10}
$\lambda_{C,n}/2\pi$	$\bar{\lambda}_{C,n}$	$0.210\,019\,415\,68(17) \times 10^{-15}$	m	8.2×10^{-10}
neutron magnetic moment	μ_n	$-0.966\,236\,47(23) \times 10^{-26}$	J T^{-1}	2.4×10^{-7}
to Bohr magneton ratio	μ_n/μ_B	$-1.041\,875\,63(25) \times 10^{-3}$		2.4×10^{-7}
to nuclear magneton ratio	μ_n/μ_N	$-1.913\,042\,72(45)$		2.4×10^{-7}
neutron g-factor $2\mu_n/\mu_N$	g_n	$-3.826\,085\,45(90)$		2.4×10^{-7}
neutron-electron magnetic moment ratio	μ_n/μ_e	$1.040\,668\,82(25) \times 10^{-3}$		2.4×10^{-7}
neutron-proton magnetic moment ratio	μ_n/μ_p	$-0.684\,979\,34(16)$		2.4×10^{-7}
neutron to shielded proton magnetic moment ratio (H_2O, sphere, 25 °C)	μ_n/μ'_p	$-0.684\,996\,94(16)$		2.4×10^{-7}
neutron gyromagnetic ratio $2\lvert\mu_n\rvert/\hbar$	γ_n	$1.832\,471\,79(43) \times 10^{8}$	s^{-1} T^{-1}	2.4×10^{-7}
	$\gamma_n/2\pi$	$29.164\,6943(69)$	MHz T^{-1}	2.4×10^{-7}
		Deuteron, d		
deuteron mass	m_d	$3.343\,583\,48(15) \times 10^{-27}$	kg	4.4×10^{-8}
		$2.013\,553\,212\,712(77)$	u	3.8×10^{-11}
energy equivalent	$m_d c^2$	$3.005\,062\,97(13) \times 10^{-10}$	J	4.4×10^{-8}
		$1875.612\,859(41)$	MeV	2.2×10^{-8}
deuteron-electron mass ratio	m_d/m_e	$3670.482\,9652(15)$		4.0×10^{-10}

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deuteron-proton mass ratio	$m_\mathrm{d}/m_\mathrm{p}$	$1.999\,007\,500\,97(18)$		9.2×10^{-11}
deuteron molar mass $N_\mathrm{A}m_\mathrm{d}$	$M(\mathrm{d}), M_\mathrm{d}$	$2.013\,553\,212\,712(77) \times 10^{-3}$	kg mol^{-1}	3.8×10^{-11}
deuteron rms charge radius	r_d	$2.1424(21) \times 10^{-15}$	m	9.8×10^{-4}
deuteron magnetic moment	μ_d	$0.433\,073\,489(10) \times 10^{-26}$	J T^{-1}	2.4×10^{-8}
to Bohr magneton ratio	$\mu_\mathrm{d}/\mu_\mathrm{B}$	$0.466\,975\,4556(39) \times 10^{-3}$		8.4×10^{-9}
to nuclear magneton ratio	$\mu_\mathrm{d}/\mu_\mathrm{N}$	$0.857\,438\,2308(72)$		8.4×10^{-9}
deuteron g-factor $\mu_\mathrm{d}/\mu_\mathrm{N}$	g_d	$0.857\,438\,2308(72)$		8.4×10^{-9}
deuteron-electron magnetic moment ratio	$\mu_\mathrm{d}/\mu_\mathrm{e}$	$-4.664\,345\,537(39) \times 10^{-4}$		8.4×10^{-9}
deuteron-proton magnetic moment ratio	$\mu_\mathrm{d}/\mu_\mathrm{p}$	$0.307\,012\,2070(24)$		7.7×10^{-9}
deuteron-neutron magnetic moment ratio	$\mu_\mathrm{d}/\mu_\mathrm{n}$	$-0.448\,206\,52(11)$		2.4×10^{-7}
		Triton, t		
triton mass	m_t	$5.007\,356\,30(22) \times 10^{-27}$	kg	4.4×10^{-8}
		$3.015\,500\,7134(25)$	u	8.2×10^{-10}
energy equivalent	$m_\mathrm{t}c^2$	$4.500\,387\,41(20) \times 10^{-10}$	J	4.4×10^{-8}
		$2808.921\,005(62)$	MeV	2.2×10^{-8}
triton-electron mass ratio	$m_\mathrm{t}/m_\mathrm{e}$	$5496.921\,5267(50)$		9.1×10^{-10}
triton-proton mass ratio	$m_\mathrm{t}/m_\mathrm{p}$	$2.993\,717\,0308(25)$		8.2×10^{-10}
triton molar mass $N_\mathrm{A}m_\mathrm{t}$	$M(\mathrm{t}), M_\mathrm{t}$	$3.015\,500\,7134(25) \times 10^{-3}$	kg mol^{-1}	8.2×10^{-10}
triton magnetic moment	μ_t	$1.504\,609\,447(38) \times 10^{-26}$	J T^{-1}	2.6×10^{-8}
to Bohr magneton ratio	$\mu_\mathrm{t}/\mu_\mathrm{B}$	$1.622\,393\,657(21) \times 10^{-3}$		1.3×10^{-8}
to nuclear magneton ratio	$\mu_\mathrm{t}/\mu_\mathrm{N}$	$2.978\,962\,448(38)$		1.3×10^{-8}
triton g-factor $2\mu_\mathrm{t}/\mu_\mathrm{N}$	g_t	$5.957\,924\,896(76)$		1.3×10^{-8}
		Helion, h		
helion mass	m_h	$5.006\,412\,34(22) \times 10^{-27}$	kg	4.4×10^{-8}
		$3.014\,932\,2468(25)$	u	8.3×10^{-10}
energy equivalent	$m_\mathrm{h}c^2$	$4.499\,539\,02(20) \times 10^{-10}$	J	4.4×10^{-8}
		$2808.391\,482(62)$	MeV	2.2×10^{-8}
helion-electron mass ratio	$m_\mathrm{h}/m_\mathrm{e}$	$5495.885\,2754(50)$		9.2×10^{-10}
helion-proton mass ratio	$m_\mathrm{h}/m_\mathrm{p}$	$2.993\,152\,6707(25)$		8.2×10^{-10}
helion molar mass $N_\mathrm{A}m_\mathrm{h}$	$M(\mathrm{h}), M_\mathrm{h}$	$3.014\,932\,2468(25) \times 10^{-3}$	kg mol^{-1}	8.3×10^{-10}
helion magnetic moment	μ_h	$-1.074\,617\,486(27) \times 10^{-26}$	J T^{-1}	2.5×10^{-8}
to Bohr magneton ratio	$\mu_\mathrm{h}/\mu_\mathrm{B}$	$-1.158\,740\,958(14) \times 10^{-3}$		1.2×10^{-8}
to nuclear magneton ratio	$\mu_\mathrm{h}/\mu_\mathrm{N}$	$-2.127\,625\,306(25)$		1.2×10^{-8}
helion g-factor $2\mu_\mathrm{h}/\mu_\mathrm{N}$	g_h	$-4.255\,250\,613(50)$		1.2×10^{-8}
shielded helion magnetic moment (gas, sphere, 25 °C)	μ'_h	$-1.074\,553\,044(27) \times 10^{-26}$	J T^{-1}	2.5×10^{-8}
to Bohr magneton ratio	$\mu'_\mathrm{h}/\mu_\mathrm{B}$	$-1.158\,671\,471(14) \times 10^{-3}$		1.2×10^{-8}
to nuclear magneton ratio	$\mu'_\mathrm{h}/\mu_\mathrm{N}$	$-2.127\,497\,718(25)$		1.2×10^{-8}
shielded helion to proton magnetic moment ratio (gas, sphere, 25 °C)	$\mu'_\mathrm{h}/\mu_\mathrm{p}$	$-0.761\,766\,558(11)$		1.4×10^{-8}
shielded helion to shielded proton magnetic moment ratio (gas/H_2O, spheres, 25 °C)	$\mu'_\mathrm{h}/\mu'_\mathrm{p}$	$-0.761\,786\,1313(33)$		4.3×10^{-9}
shielded helion gyromagnetic ratio $2\lvert\mu'_\mathrm{h}\rvert/\hbar$ (gas, sphere, 25 °C)	γ'_h	$2.037\,894\,659(51) \times 10^{8}$	s^{-1} T^{-1}	2.5×10^{-8}
	$\gamma'_\mathrm{h}/2\pi$	$32.434\,100\,84(81)$	MHz T^{-1}	2.5×10^{-8}
		Alpha particle, α		
alpha particle mass	m_α	$6.644\,656\,75(29) \times 10^{-27}$	kg	4.4×10^{-8}
		$4.001\,506\,179\,125(62)$	u	1.5×10^{-11}

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energy equivalent	$m_\alpha c^2$	$5.971\,919\,67(26) \times 10^{-10}$	J	4.4×10^{-8}
		$3727.379\,240(82)$	MeV	2.2×10^{-8}
alpha particle to electron mass ratio	m_α/m_e	$7294.299\,5361(29)$		4.0×10^{-10}
alpha particle to proton mass ratio	m_α/m_p	$3.972\,599\,689\,33(36)$		9.0×10^{-11}
alpha particle molar mass $N_A m_\alpha$	$M(\alpha), M_\alpha$	$4.001\,506\,179\,125(62) \times 10^{-3}$	kg mol^{-1}	1.5×10^{-11}

[1] Value recommended by the Particle Data Group (Nakamura, *et al.*, 2010).

[2] Based on the ratio of the masses of the W and Z bosons m_W/m_Z recommended by the Particle Data Group (Nakamura, *et al.*, 2010). The value for $\sin^2\theta_W$ they recommend, which is based on a particular variant of the modified minimal subtraction ($\overline{\text{MS}}$) scheme, is $\sin^2\hat{\theta}_W(M_Z) = 0.231\,22(15)$.

[3] This and all other values involving m_τ are based on the value of $m_\tau c^2$ in MeV recommended by the Particle Data Group (Nakamura, *et al.*, 2010), but with a standard uncertainty of 0.29 MeV rather than the quoted uncertainty of -0.26 MeV, $+0.29$ MeV.

[4] The helion, symbol h, is the nucleus of the ^{3}He atom.