Fundamental Physical Constants Table

This table is the complete listing of fundamental physical constants.

Quantity	Value	Uncertainty	Unit
speed of light in vacuum	299 792 458	(exact)	m s^-1
magn. constant	12.566 370 614...e-7	(exact)	N A^-2
electric constant	8.854 187 817...e-12	(exact)	F m^-1
characteristic impedance of vacuum	376.730 313 461...	(exact)	ohm
Newtonian constant of gravitation	6.6742e-11	0.0010e-11	m^3 kg^-1 s^-2
Newtonian constant of gravitation over h-bar c	6.7087e-39	0.0010e-39	(GeV/c^2)^-2
Planck constant	6.626 0693e-34	0.000 0011e-34	J s
Planck constant in eV s	4.135 667 43e-15	0.000 000 35e-15	eV s
Planck constant over 2 pi times c in MeV fm	197.326 968	0.000 017	MeV fm
Planck constant over 2 pi	1.054 571 68e-34	0.000 000 18e-34	J s
Planck constant over 2 pi in eV s	6.582 119 15e-16	0.000 000 56e-16	eV s
Planck mass	2.176 45e-8	0.000 16e-8	kg
Planck temperature	1.416 79e32	0.000 11e32	K
Planck length	1.616 24e-35	0.000 12e-35	m
Planck time	5.391 21e-44	0.000 40e-44	s
elementary charge	1.602 176 53e-19	0.000 000 14e-19	C
elementary charge over h	2.417 989 40e14	0.000 000 21e14	A J^-1

magn. flux quantum	2.067 833 72e-15	0.000 000 18e-15	Wb
conductance quantum	7.748 091 733e-5	0.000 000 026e-5	S
inverse of conductance quantum	12 906.403 725	0.000 043	ohm
Josephson constant	483 597.879e9	0.041e9	Hz V^-1
von Klitzing constant	25 812.807 449	0.000 086	ohm
Bohr magneton	927.400 949e-26	0.000 080e-26	J T^-1
Bohr magneton in eV/T	5.788 381 804e-5	0.000 000 039e-5	eV T^-1
Bohr magneton in Hz/T	13.996 2458e9	0.000 0012e9	Hz T^-1
Bohr magneton in inverse meters per tesla	46.686 4507	0.000 0040	m^-1 T^-1
Bohr magneton in K/T	0.671 7131	0.000 0012	K T^-1
nuclear magneton	5.050 783 43e-27	0.000 000 43e-27	J T^-1
nuclear magneton in eV/T	3.152 451 259e-8	0.000 000 021e-8	eV T^-1
nuclear magneton in MHz/T	7.622 593 71	0.000 000 65	MHz T^-1
nuclear magneton in inverse meters per tesla	2.542 623 58e-2	0.000 000 22e-2	m^-1 T^-1
nuclear magneton in K/T	3.658 2637e-4	0.000 0064e-4	K T^-1
fine-structure constant	7.297 352 568e-3	0.000 000 024e-3	
inverse fine-structure constant	137.035 999 11	0.000 000 46	
Rydberg constant	10 973 731.568 525	0.000 073	m^-1
Rydberg constant times c in Hz	3.289 841 960 360e15	0.000 000 000 022e15	Hz
Rydberg constant times hc in J	2.179 872 09e-18	0.000 000 37e-18	J
Rydberg constant times hc in eV	13.605 6923	0.000 0012	eV
Bohr radius	0.529 177 2108e-10	0.000 000 0018e-10	m
Hartree energy	4.359 744 17e-18	0.000 000 75e-18	J
Hartree energy in eV	27.211 3845	0.000 0023	eV
quantum of circulation	3.636 947 550e-4	0.000 000 024e-4	m^2 s^-1

quantum of circulation times 2	7.273 895 101e-4	0.000 000 048e-4	m^2 s^-1
Fermi coupling constant	1.166 39e-5	0.000 01e-5	GeV^-2
weak mixing angle	0.222 15	0.000 76	
electron mass	9.109 3826e-31	0.000 0016e-31	kg
electron mass in u	5.485 799 0945e-4	0.000 000 0024e-4	u
electron mass energy equivalent	8.187 1047e-14	0.000 0014e-14	J
electron mass energy equivalent in MeV	0.510 998 918	0.000 000 044	MeV
electron-muon mass ratio	4.836 331 67e-3	0.000 000 13e-3	
electron-tau mass ratio	2.875 64e-4	0.000 47e-4	
electron-proton mass ratio	5.446 170 2173e-4	0.000 000 0025e-4	
electron-neutron mass ratio	5.438 673 4481e-4	0.000 000 0038e-4	
electron-deuteron mass ratio	2.724 437 1095e-4	0.000 000 0013e-4	
electron to alpha particle mass ratio	1.370 933 555 75e-4	0.000 000 000 61e-4	
electron charge to mass quotient	-1.758 820 12e11	0.000 000 15e11	C kg^-1
electron molar mass	5.485 799 0945e-7	0.000 000 0024e-7	kg mol^-1
Compton wavelength	2.426 310 238e-12	0.000 000 016e-12	m
Compton wavelength over 2 pi	386.159 2678e-15	0.000 0026e-15	m
classical electron radius	2.817 940 325e-15	0.000 000 028e-15	m
Thomson cross section	0.665 245 873e-28	0.000 000 013e-28	m^2
electron magn. moment	-928.476 412e-26	0.000 080e-26	J T^-1
electron magn. moment to Bohr magneton ratio	-1.001 159 652 1859	0.000 000 000 0038	
electron magn. moment to nuclear magneton ratio	-1838.281 971 07	0.000 000 85	
electron magn. moment anomaly	1.159 652 1859e-3	0.000 000 0038e-3	
electron g factor	-2.002 319 304 3718	0.000 000 000 0075	
electron-muon magn. moment ratio	206.766 9894	0.000 0054	

electron-proton magn. moment ratio	-658.210 6862	0.000 0066	
electron to shielded proton magn. moment ratio	-658.227 5956	0.000 0071	
electron-neutron magn. moment ratio	960.920 50	0.000 23	
electron-deuteron magn. moment ratio	-2143.923 493	0.000 023	
electron to shielded helion magn. moment ratio	864.058 255	0.000 010	
electron gyromagn. ratio	1.760 859 74e11	0.000 000 15e11	s^-1 T^-1
electron gyromagn. ratio over 2 pi	28 024.9532	0.0024	MHz T^-1
muon mass	1.883 531 40e-28	0.000 000 33e-28	kg
muon mass in u	0.113 428 9264	0.000 000 0030	u
muon mass energy equivalent	1.692 833 60e-11	0.000 000 29e-11	J
muon mass energy equivalent in MeV	105.658 3692	0.000 0094	MeV
muon-electron mass ratio	206.768 2838	0.000 0054	
muon-tau mass ratio	5.945 92e-2	0.000 97e-2	
muon-proton mass ratio	0.112 609 5269	0.000 000 0029	
muon-neutron mass ratio	0.112 454 5175	0.000 000 0029	
muon molar mass	0.113 428 9264e-3	0.000 000 0030e-3	kg mol^-1
muon Compton wavelength	11.734 441 05e-15	0.000 000 30e-15	m
muon Compton wavelength over 2 pi	1.867 594 298e-15	0.000 000 047e-15	m
muon magn. moment	-4.490 447 99e-26	0.000 000 40e-26	J T^-1
muon magn. moment to Bohr magneton ratio	-4.841 970 45e-3	0.000 000 13e-3	
muon magn. moment to nuclear magneton ratio	-8.890 596 98	0.000 000 23	
muon magn. moment anomaly	1.165 919 81e-3	0.000 000 62e-3	
muon g factor	-2.002 331 8396	0.000 000 0012	
muon-proton magn. moment ratio	-3.183 345 118	0.000 000 089	
tau mass	3.167 77e-27	0.000 52e-27	kg

tau mass in u	1.907 68	0.000 31	u
tau mass energy equivalent	2.847 05e-10	0.000 46e-10	J
tau mass energy equivalent in MeV	1776.99	0.29	MeV
tau-electron mass ratio	3477.48	0.57	
tau-muon mass ratio	16.8183	0.0027	
tau-proton mass ratio	1.893 90	0.000 31	
tau-neutron mass ratio	1.891 29	0.000 31	
tau molar mass	1.907 68e-3	0.000 31e-3	kg mol^-1
tau Compton wavelength	0.697 72e-15	0.000 11e-15	m
tau Compton wavelength over 2 pi	0.111 046e-15	0.000 018e-15	m
proton mass	1.672 621 71e-27	0.000 000 29e-27	kg
proton mass in u	1.007 276 466 88	0.000 000 000 13	u
proton mass energy equivalent	1.503 277 43e-10	0.000 000 26e-10	J
proton mass energy equivalent in MeV	938.272 029	0.000 080	MeV
proton-electron mass ratio	1836.152 672 61	0.000 000 85	
proton-muon mass ratio	8.880 243 33	0.000 000 23	
proton-tau mass ratio	0.528 012	0.000 086	
proton-neutron mass ratio	0.998 623 478 72	0.000 000 000 58	
proton charge to mass quotient	9.578 833 76e7	0.000 000 82e7	C kg^-1
proton molar mass	1.007 276 466 88e-3	0.000 000 000 13e-3	kg mol^-1
proton Compton wavelength	1.321 409 8555e-15	0.000 000 0088e-15	m
proton Compton wavelength over 2 pi	0.210 308 9104e-15	0.000 000 0014e-15	m
proton magn. moment	1.410 606 71e-26	0.000 000 12e-26	J T^-1
proton magn. moment to Bohr magneton ratio	1.521 032 206e-3	0.000 000 015e-3	
proton magn. moment to nuclear magneton ratio	2.792 847 351	0.000 000 028	

proton g factor	5.585 694 701	0.000 000 056	
proton-neutron magn. moment ratio	-1.459 898 05	0.000 000 34	
shielded proton magn. moment	1.410 570 47e-26	0.000 000 12e-26	J T^-1
shielded proton magn. moment to Bohr magneton ratio	1.520 993 132e-3	0.000 000 016e-3	
shielded proton magn. moment to nuclear magneton ratio	2.792 775 604	0.000 000 030	
proton magn. shielding correction	25.689e-6	0.015e-6	
proton gyromagn. ratio	2.675 222 05e8	0.000 000 23e8	s^-1 T^-1
proton gyromagn. ratio over 2 pi	42.577 4813	0.000 0037	MHz T^-1
shielded proton gyromagn. ratio	2.675 153 33e8	0.000 000 23e8	s^-1 T^-1
shielded proton gyromagn. ratio over 2 pi	42.576 3875	0.000 0037	MHz T^-1
proton rms charge radius	0.8750e-15	0.0068e-15	m
neutron mass	1.674 927 28e-27	0.000 000 29e-27	kg
neutron mass in u	1.008 664 915 60	0.000 000 000 55	u
neutron mass energy equivalent	1.505 349 57e-10	0.000 000 26e-10	J
neutron mass energy equivalent in MeV	939.565 360	0.000 081	MeV
neutron-electron mass ratio	1838.683 6598	0.000 0013	
neutron-muon mass ratio	8.892 484 02	0.000 000 23	
neutron-tau mass ratio	0.528 740	0.000 086	
neutron-proton mass ratio	1.001 378 418 70	0.000 000 000 58	
neutron molar mass	1.008 664 915 60e-3	0.000 000 000 55e-3	kg mol^-1
neutron Compton wavelength	1.319 590 9067e-15	0.000 000 0088e-15	m
neutron Compton wavelength over 2 pi	0.210 019 4157e-15	0.000 000 0014e-15	m
neutron magn. moment	-0.966 236 45e-26	0.000 000 24e-26	J T^-1
neutron magn. moment to Bohr magneton ratio	-1.041 875 63e-3	0.000 000 25e-3	
neutron magn. moment to nuclear magneton ratio	-1.913 042 73	0.000 000 45	

neutron g factor	-3.826 085 46	0.000 000 90	
neutron-electron magn. moment ratio	1.040 668 82e-3	0.000 000 25e-3	
neutron-proton magn. moment ratio	-0.684 979 34	0.000 000 16	
neutron to shielded proton magn. moment ratio	-0.684 996 94	0.000 000 16	
neutron gyromagn. ratio	1.832 471 83e8	0.000 000 46e8	s^-1 T^-1
neutron gyromagn. ratio over 2 pi	29.164 6950	0.000 0073	MHz T^-1
deuteron mass	3.343 583 35e-27	0.000 000 57e-27	kg
deuteron mass in u	2.013 553 212 70	0.000 000 000 35	u
deuteron mass energy equivalent	3.005 062 85e-10	0.000 000 51e-10	J
deuteron mass energy equivalent in MeV	1875.612 82	0.000 16	MeV
deuteron-electron mass ratio	3670.482 9652	0.000 0018	
deuteron-proton mass ratio	1.999 007 500 82	0.000 000 000 41	
deuteron molar mass	2.013 553 212 70e-3	0.000 000 000 35e-3	kg mol^-1
deuteron magn. moment	0.433 073 482e-26	0.000 000 038e-26	J T^-1
deuteron magn. moment to Bohr magneton ratio	0.466 975 4567e-3	0.000 000 0050e-3	
deuteron magn. moment to nuclear magneton ratio	0.857 438 2329	0.000 000 0092	
deuteron-electron magn. moment ratio	-4.664 345 548e-4	0.000 000 050e-4	
deuteron-proton magn. moment ratio	0.307 012 2084	0.000 000 0045	
deuteron-neutron magn. moment ratio	-0.448 206 52	0.000 000 11	
deuteron rms charge radius	2.1394e-15	0.0028e-15	m
helion mass	5.006 412 14e-27	0.000 000 86e-27	kg
helion mass in u	3.014 932 2434	0.000 000 0058	u
helion mass energy equivalent	4.499 538 84e-10	0.000 000 77e-10	J
helion mass energy equivalent in MeV	2808.391 42	0.000 24	MeV
helion-electron mass ratio	5495.885 269	0.000 011	

helion-proton mass ratio	2.993 152 6671	0.000 000 0058	
helion molar mass	3.014 932 2434e-3	0.000 000 0058e-3	kg mol^-1
shielded helion magn. moment	-1.074 553 024e-26	0.000 000 093e-26	J T^-1
shielded helion magn. moment to Bohr magneton ratio	-1.158 671 474e-3	0.000 000 014e-3	
shielded helion magn. moment to nuclear magneton ratio	-2.127 497 723	0.000 000 025	
shielded helion to proton magn. moment ratio	-0.761 766 562	0.000 000 012	
shielded helion to shielded proton magn. moment ratio	-0.761 786 1313	0.000 000 0033	
shielded helion gyromagn. ratio	2.037 894 70e8	0.000 000 18e8	s^-1 T^-1
shielded helion gyromagn. ratio over 2 pi	32.434 1015	0.000 0028	MHz T^-1
alpha particle mass	6.644 6565e-27	0.000 0011e-27	kg
alpha particle mass in u	4.001 506 179 149	0.000 000 000 056	u
alpha particle mass energy equivalent	5.971 9194e-10	0.000 0010e-10	J
alpha particle mass energy equivalent in MeV	3727.379 17	0.000 32	MeV
alpha particle-electron mass ratio	7294.299 5363	0.000 0032	
alpha particle-proton mass ratio	3.972 599 689 07	0.000 000 000 52	
alpha particle molar mass	4.001 506 179 149e-3	0.000 000 000 056e-3	kg mol^-1
Avogadro constant	6.022 1415e23	0.000 0010e23	mol^-1
atomic mass constant	1.660 538 86e-27	0.000 000 28e-27	kg
atomic mass constant energy equivalent	1.492 417 90e-10	0.000 000 26e-10	J
atomic mass constant energy equivalent in MeV	931.494 043	0.000 080	MeV
Faraday constant	96 485.3383	0.0083	C mol^-1
Faraday constant for conventional electric current	96 485.336	0.016	C_90 mol^-1
molar Planck constant	3.990 312 716e-10	0.000 000 027e-10	J s mol^-1
molar Planck constant times c	0.119 626 565 72	0.000 000 000 80	J m mol^-1
molar gas constant	8.314 472	0.000 015	J mol^-1 K^-1

Boltzmann constant	1.380 6505e-23	0.000 0024e-23	J K^-1
Boltzmann constant in eV/K	8.617 343e-5	0.000 015e-5	eV K^-1
Boltzmann constant in Hz/K	2.083 6644e10	0.000 0036e10	Hz K^-1
Boltzmann constant in inverse meters per kelvin	69.503 56	0.000 12	m^-1 K^-1
molar volume of ideal gas (273.15 K, 101.325 kPa)	22.413 996e-3	0.000 039e-3	m^3 mol^-1
Loschmidt constant (273.15 K, 101.325 kPa)	2.686 7773e25	0.000 0047e25	m^-3
molar volume of ideal gas (273.15 K, 100 kPa)	22.710 981e-3	0.000 040e-3	m^3 mol^-1
Sackur-Tetrode constant (1 K, 100 kPa)	-1.151 7047	0.000 0044	
Sackur-Tetrode constant (1 K, 101.325 kPa)	-1.164 8677	0.000 0044	
Stefan-Boltzmann constant	5.670 400e-8	0.000 040e-8	W m^-2 K^-4
first radiation constant	3.741 771 38e-16	0.000 000 64e-16	W m^2
first radiation constant for spectral radiance	1.191 042 82e-16	0.000 000 20e-16	W m^2 sr^-1
second radiation constant	1.438 7752e-2	0.000 0025e-2	m K
Wien displacement law constant	2.897 7685e-3	0.000 0051e-3	m K
molar mass of carbon-12	12e-3	(exact)	kg mol^-1
molar mass constant	1e-3	(exact)	kg mol^-1
conventional value of Josephson constant	483 597.9e9	(exact)	Hz V^-1
conventional value of von Klitzing constant	25 812.807	(exact)	ohm
standard atmosphere	101 325	(exact)	Pa
standard acceleration of gravity	9.806 65	(exact)	m s^-2
Cu x unit	1.002 077 10e-13	0.000 000 29e-13	m
Mo x unit	1.002 099 66e-13	0.000 000 53e-13	m
Angstrom star	1.000 015 09e-10	0.000 000 90e-10	m
lattice parameter of silicon	543.102 122e-12	0.000 020e-12	m
{220} lattice spacing of silicon	192.015 5965e-12	0.000 0070e-12	m

molar volume of silicon	12.058 8382e-6	0.000 0024e-6	m^3 mol^-1
electron volt	1.602 176 53e-19	0.000 000 14e-19	J
unified atomic mass unit	1.660 538 86e-27	0.000 000 28e-27	kg
natural unit of velocity	299 792 458	(exact)	m s^-1
natural unit of action	1.054 571 68e-34	0.000 000 18e-34	J s
natural unit of action in eV s	6.582 119 15e-16	0.000 000 56e-16	eV s
natural unit of mass	9.109 3826e-31	0.000 0016e-31	kg
natural unit of energy	8.187 1047e-14	0.000 0014e-14	J
natural unit of energy in MeV	0.510 998 918	0.000 000 044	MeV
natural unit of momentum	2.730 924 19e-22	0.000 000 47e-22	kg m s^-1
natural unit of momentum in MeV/c	0.510 998 918	0.000 000 044	MeV/c
natural unit of length	386.159 2678e-15	0.000 0026e-15	m
natural unit of time	1.288 088 6677e-21	0.000 000 0086e-21	s
atomic unit of charge	1.602 176 53e-19	0.000 000 14e-19	C
atomic unit of mass	9.109 3826e-31	0.000 0016e-31	kg
atomic unit of action	1.054 571 68e-34	0.000 000 18e-34	J s
atomic unit of length	0.529 177 2108e-10	0.000 000 0018e-10	m
atomic unit of energy	4.359 744 17e-18	0.000 000 75e-18	J
atomic unit of time	2.418 884 326 505e-17	0.000 000 000 016e-17	s
atomic unit of force	8.238 7225e-8	0.000 0014e-8	N
atomic unit of velocity	2.187 691 2633e6	0.000 000 0073e6	m s^-1
atomic unit of momentum	1.992 851 66e-24	0.000 000 34e-24	kg m s^-1
atomic unit of current	6.623 617 82e-3	0.000 000 57e-3	A
atomic unit of charge density	1.081 202 317e12	0.000 000 093e12	C m^-3
atomic unit of electric potential	27.211 3845	0.000 0023	V

atomic unit of electric field	5.142 206 42e11	0.000 000 44e11	V m^-1
atomic unit of electric field gradient	9.717 361 82e21	0.000 000 83e21	V m^-2
atomic unit of electric dipole moment	8.478 353 09e-30	0.000 000 73e-30	C m
atomic unit of electric quadrupole moment	4.486 551 24e-40	0.000 000 39e-40	C m^2
atomic unit of electric polarizablity	1.648 777 274e-41	0.000 000 016e-41	C^2 m^2 J^-1
atomic unit of 1st hyperpolarizablity	3.206 361 51e-53	0.000 000 28e-53	C^3 m^3 J^-2
atomic unit of 2nd hyperpolarizablity	6.235 3808e-65	0.000 0011e-65	C^4 m^4 J^-3
atomic unit of magn. flux density	2.350 517 42e5	0.000 000 20e5	T
atomic unit of magn. dipole moment	1.854 801 90e-23	0.000 000 16e-23	J T^-1
atomic unit of magnetizability	7.891 036 60e-29	0.000 000 13e-29	J T^-2
atomic unit of permittivity	1.112 650 056...e-10	(exact)	F m^-1
joule-kilogram relationship	1.112 650 056...e-17	(exact)	kg
joule-inverse meter relationship	5.034 117 20e24	0.000 000 86e24	m^-1
joule-hertz relationship	1.509 190 37e33	0.000 000 26e33	Hz
joule-kelvin relationship	7.242 963e22	0.000 013e22	K
joule-electron volt relationship	6.241 509 47e18	0.000 000 53e18	eV
joule-atomic mass unit relationship	6.700 5361e9	0.000 0011e9	u
joule-hartree relationship	2.293 712 57e17	0.000 000 39e17	E_h
kilogram-joule relationship	8.987 551 787...e16	(exact)	J
kilogram-inverse meter relationship	4.524 438 91e41	0.000 000 77e41	m^-1
kilogram-hertz relationship	1.356 392 66e50	0.000 000 23e50	Hz
kilogram-kelvin relationship	6.509 650e39	0.000 011e39	K
kilogram-electron volt relationship	5.609 588 96e35	0.000 000 48e35	eV
kilogram-atomic mass unit relationship	6.022 1415e26	0.000 0010e26	u
kilogram-hartree relationship	2.061 486 05e34	0.000 000 35e34	E_h

inverse meter-joule relationship	1.986 445 61e-25	0.000 000 34e-25	J
inverse meter-kilogram relationship	2.210 218 81e-42	0.000 000 38e-42	kg
inverse meter-hertz relationship	299 792 458	(exact)	Hz
inverse meter-kelvin relationship	1.438 7752e-2	0.000 0025e-2	K
inverse meter-electron volt relationship	1.239 841 91e-6	0.000 000 11e-6	eV
inverse meter-atomic mass unit relationship	1.331 025 0506e-15	0.000 000 0089e-15	u
inverse meter-hartree relationship	4.556 335 252 760e-8	0.000 000 000 030e-8	E_h
hertz-joule relationship	6.626 0693e-34	0.000 0011e-34	J
hertz-kilogram relationship	7.372 4964e-51	0.000 0013e-51	kg
hertz-inverse meter relationship	3.335 640 951...e-9	(exact)	m^-1
hertz-kelvin relationship	4.799 2374e-11	0.000 0084e-11	K
hertz-electron volt relationship	4.135 667 43e-15	0.000 000 35e-15	eV
hertz-atomic mass unit relationship	4.439 821 667e-24	0.000 000 030e-24	u
hertz-hartree relationship	1.519 829 846 006e-16	0.000 000 000 010e-16	E_h
kelvin-joule relationship	1.380 6505e-23	0.000 0024e-23	J
kelvin-kilogram relationship	1.536 1808e-40	0.000 0027e-40	kg
kelvin-inverse meter relationship	69.503 56	0.000 12	m^-1
kelvin-hertz relationship	2.083 6644e10	0.000 0036e10	Hz
kelvin-electron volt relationship	8.617 343e-5	0.000 015e-5	eV
kelvin-atomic mass unit relationship	9.251 098e-14	0.000 016e-14	u
kelvin-hartree relationship	3.166 8153e-6	0.000 0055e-6	E_h
electron volt-joule relationship	1.602 176 53e-19	0.000 000 14e-19	J
electron volt-kilogram relationship	1.782 661 81e-36	0.000 000 15e-36	kg
electron volt-inverse meter relationship	8.065 544 45e5	0.000 000 69e5	m^-1
electron volt-hertz relationship	2.417 989 40e14	0.000 000 21e14	Hz

electron volt-kelvin relationship	1.160 4505e4	0.000 0020e4	K
electron volt-atomic mass unit relationship	1.073 544 171e-9	0.000 000 092e-9	u
electron volt-hartree relationship	3.674 932 45e-2	0.000 000 31e-2	E_h
atomic mass unit-joule relationship	1.492 417 90e-10	0.000 000 26e-10	J
atomic mass unit-kilogram relationship	1.660 538 86e-27	0.000 000 28e-27	kg
atomic mass unit-inverse meter relationship	7.513 006 608e14	0.000 000 050e14	m^-1
atomic mass unit-hertz relationship	2.252 342 718e23	0.000 000 015e23	Hz
atomic mass unit-kelvin relationship	1.080 9527e13	0.000 0019e13	K
atomic mass unit-electron volt relationship	931.494 043e6	0.000 080e6	eV
atomic mass unit-hartree relationship	3.423 177 686e7	0.000 000 023e7	E_h
hartree-joule relationship	4.359 744 17e-18	0.000 000 75e-18	J
hartree-kilogram relationship	4.850 869 60e-35	0.000 000 83e-35	kg
hartree-inverse meter relationship	2.194 746 313 705e7	0.000 000 000 015e7	m^-1
hartree-hertz relationship	6.579 683 920 721e15	0.000 000 000 044e15	Hz
hartree-kelvin relationship	3.157 7465e5	0.000 0055e5	K
hartree-electron volt relationship	27.211 3845	0.000 0023	eV
hartree-atomic mass unit relationship	2.921 262 323e-8	0.000 000 019e-8	u