Conversion Factors for Energy Equivalents

	J	kg	m^{-1}	Hz
1 J	(1 J) = 1 J	(1 J)/c^2 = $1.112\,650\,056 \times 10^{-17}$ kg	(1 J)/hc = $5.034\,1125(30) \times 10^{24}$ m^{-1}	(1 J)/h = $1.509\,188\,97(90) \times 10^{33}$ Hz
1 kg	(1 kg) c^2 = $8.987\,551\,787 \times 10^{16}$ J	(1 kg) = 1 kg	(1 kg) c/h = $4.524\,4347(27) \times 10^{41}$ m^{-1}	(1 kg) c^2/h = $1.356\,391\,40(81) \times 10^{50}$ Hz
1 m^{-1}	(1 m^{-1}) hc = $1.986\,4475(12) \times 10^{-25}$ J	(1 m^{-1}) h/c = $2.210\,2209(13) \times 10^{-42}$ kg	(1 m^{-1}) = 1 m^{-1}	(1 m^{-1}) c = 299 792 458 Hz
1 Hz	(1 Hz) h = $6.626\,0755(40) \times 10^{-34}$ J	(1 Hz) h/c^2 = $7.372\,5032(44) \times 10^{-51}$ kg	(1 Hz)/c = $3.335\,640\,952 \times 10^{-9}$ m^{-1}	(1 Hz) = 1 Hz
1 K	(1 K) k = $1.380\,658(12) \times 10^{-23}$ J	(1 K) k/c^2 = $1.536\,189(13) \times 10^{-40}$ kg	(1 K) k/hc = $69.503\,87(59)$ m^{-1}	(1 K) k/h = $2.083\,674(18) \times 10^{10}$ Hz
1 eV	(1 eV) = $1.602\,177\,33(49) \times 10^{-19}$ J	(1 eV)/c^2 = $1.782\,662\,70(54) \times 10^{-36}$ kg	(1 eV)/hc = $806\,554.10(24)$ m^{-1}	(1 eV)/h = $2.417\,988\,36(72) \times 10^{14}$ Hz
1 u	(1 u) c^2 = $1.492\,419\,09(88) \times 10^{-10}$ J	(1 u) = $1.660\,5402(10) \times 10^{-27}$ kg	(1 u) c/h = $7.513\,005\,63(67) \times 10^{14}$ m^{-1}	(1 u) c^2/h = $2.252\,342\,42(20) \times 10^{23}$ Hz
1 E_h	(1 E_h) = $4.359\,7482(26) \times 10^{-18}$ J	(1 E_h)/c^2 = $4.850\,8741(29) \times 10^{-35}$ kg	(1 E_h)/hc = $21\,947\,463.067(26)$ m^{-1}	(1 E_h)/h = $6.579\,683\,8999(78) \times 10^{15}$ Hz

Conversion Factors for Energy Equivalents

	K	eV	u	E_h
1 J	(1 J)/k = 7.242 924(61) × 10^{22} K	(1 J) = 6.241 5064(19) × 10^{18} eV	(1 J)/c^2 = 6.700 530 8(40) × 10^{9} u	(1 J) = 2.293 7104(14) × 10^{17} E_h
1 kg	(1 kg) c^2/k = 6.509 616(55) 3× 10^{39} K	(1 kg) c^2 = 5.609 5862(17) × 10^{35} eV	(1 kg) = 6.022 1367(36) × 10^{26} u	(1 kg) c^2 = 2.061 4841(12) × 10^{34} E_h
1 m^{-1}	(1 m^{-1}) hc/k = 0.014 387 69(12) K	(1 m^{-1}) hc = 1.239 842 44(37) × 10^{-6} eV	(1 m^{-1}) h/c = 1.331 025 22(12) × 10^{-15} u	(1 m^{-1}) hc = 4.556 335 2672(54) × 10^{-8} E_h
1 Hz	(1 Hz) h/k = 4.799 216(41) × 10^{-11} K	(1 Hz) h = 4.135 6692(12) × 10^{-15} eV	(1 Hz) h/c^2 = 4.439 822 24(40) × 10^{-24} u	(1 Hz) h = 1.519 829 8508(18) × 10^{-16} E_h
1 K	(1 K) = 1 K	(1 K) k = 8.617 385(73) × 10^{-5} eV	(1 K) k/c^2 = 9.251 140(78) × 10^{-14} u	(1 K) k = 3.166 829(27) × 10^{-6} E_h
1 eV	(1 eV)/k = 11 604.45(10) K	(1 eV) = 1 eV	(1 eV) /c^2 = 1.073 543 85(33) × 10^{-9} u	(1 eV) = 0.036 749 309(11) E_h
1 u	(1 u) c^2/k = 1.080 9478(91) × 10^{13} K	(1 u) c^2 = 931.494 32(28) × 10^{6} eV	(1 u) = 1 u	(1 u) c^2 = 3.423 177 25(31) × 10^{7} E_h
1 E_h	(1 E_h)/k = 3.157 733(27) × 10^{5} K	(1 E_h) = 27.211 3961(81) eV	(1 E_h)/ c^2 = 2.921 262 69(26) × 10^{-8} u	(1 E_h) = 1 E_h