Table 2.4. Miscellaneous Conversion Factors

Standard gravity, g_0	= 9.806 65 meters per second per second*
Standard atmospheric pressure, P_0	= $1.013\,25 \times 10^5$ newtons per square meter*
	= $1.013\,25 \times 10^6$ dynes per square centimeter*
1 thermodynamic calorie,[1] cal_c	= 4.1840 joules*
1 IT calorie[2], cal_s	= 4.1868 joules*
1 liter, l	= 10^{-3} cubic meter*
1 angstrom unit, Å	= 10^{-10} meter*
1 bar	= 10^5 newtons per square meter*
	= 10^6 dynes per square centimeter*
1 gal	= 10^{-2} meter per second per second*
	= 1 centimeter per second per second*
1 astronomical unit, AU	= 1.496×10^{11} meters
1 light year	= 9.46×10^{15} meters
1 parsec	= 3.08×10^{16} meters
	= 3.26 light years

1 curie, the quantity of radioactive material undergoing 3.7×10^{10} disintegrations per second*.

1 roentgen, the exposure of x- or gamma radiation which produces together with its secondaries 2.082×10^9 electron-ion pairs in 0.001 293 gram of air.

The index of refraction of the atmosphere for radio waves of frequency less than 3×10^{10} Hz is given by $(n - 1)10^6 = (77.6/t)\ (p + 4810e/t)$, where n is the refractive index; t, temperature in kelvins; p, total pressure in millibars; e, water vapor partial pressure in millibars.

Factors for converting the customary United States units to units of the metric system are given in Table 2.5.

Table 2.5. Factors for Converting Customary U.S. Units to SI Units

1 yard	0.914 4 meter*
1 foot	0.304 8 meter*
1 inch	0.025 4 meter*
1 statute mile	1 609.344 meters*
1 nautical mile (international)	1 852 meters*
1 pound (avdp.)	0.453 592 37 kilogram*
1 oz. (avdp.)	0.028 349 52 kilogram
1 pound force	4.448 22 newtons
1 slug	14.593 9 kilograms
1 poundal	0.138 255 newtons
1 foot pound	1.355 82 joules
Temperature (Fahrenheit)	32 + (9/5) Celsius temperature*
1 British thermal unit[3]	1055 joules

Geodetic constants for the international (Hayford) spheroid are given in Table 2.6. The gravity values are on the basis of the revised Potsdam value. They are about 14 parts per million smaller than previous values. They are calculated for the surface of the geoid by the international formula.

Table 2.6. Geodetic Constants

a = 6 378 388 m; f = 1/297; b = 6 356 912 m

Latitude	Length of 1′ of longitude	Length of 1′ of latitude	g
	Meters	*Meters*	*m/s²*
0°	1 855.398	1 842.925	9.780 350
15	1 792.580	1 844.170	9.783 800
30	1 608.174	1 847.580	9.793 238
45	1 314.175	1 852.256	9.806 154
60	930.047	1 856.951	9.819 099
75	481.725	1 860.401	9.828 593
90	0	1 861.666	9.832 072

[1] Used principally by chemists.

[2] Used principally by engineers.

[3] Various definitions are given for the British thermal unit. This represents a rounded mean value differing from none of the more important definitions by more than 3 in 10^4.

* Exact value.