Appendix Six SI Units and Conversion Factors

Length

SI unit: meter (m)

1 meter = 1.0936 yards
1 centimeter = 0.39370 inch
1 inch = 2.54 centimeters (exactly)
1 kilometer = 0.62137 mile
1 mile = 5280 feet
= 1.6093 kilometers
1 angstrom = 10^{-10} meter
= 100 picometers

Mass

SI unit: kilogram (kg)

1 kilogram = 1000 grams
= 2.2046 pounds
1 pound = 453.59 grams
= 0.45359 kilogram
= 16 ounces
1 ton = 2000 pounds
= 907.185 kilograms
1 metric ton = 1000 kilograms
= 2204.6 pounds
1 atomic mass unit = 1.66056×10^{-27} kilograms

Volume

SI unit: cubic meter (m^3)

1 liter = 10^{-3} m^3
= 1 dm^3
= 1.0567 quarts
1 gallon = 4 quarts
= 8 pints
= 3.7854 liters
1 quart = 32 fluid ounces
= 0.94633 liter

Temperature

SI unit: kelvin (K)

0 K = −273.15°C
= −459.67°F
K = °C + 273.15
$°C = \frac{5}{9}(°F - 32)$
$°F = \frac{9}{5}(°C) + 32$

Energy

SI unit: joule (J)

1 joule = 1 $kg \cdot m^2/s^2$
= 0.23901 calorie
= 9.4781×10^{-4} btu (British thermal unit)
1 calorie = 4.184 joules
= 3.965×10^{-3} btu
1 btu = 1055.06 joules
= 252.2 calories

Pressure

SI unit: pascal (Pa)

1 pascal = 1 N/m^2
= 1 $kg/m \cdot s^2$
1 atmosphere = 101.325 kilopascals
= 760 torr (mmHg)
= 14.70 pounds per square inch
1 bar = 10^5 pascals