

# 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	= $1.66054 \times 10^{-27}$ 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	= $-273.15^\circ C$ = $-459.67^\circ F$
K	= $^\circ C + 273.15$
$^\circ C$	= $\frac{5}{9} (^\circ F - 32)$
$^\circ F$	= $\frac{9}{5} (^\circ C) + 32$

## Energy

SI unit: joule (J)

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

## Pressure

SI unit: pascal (Pa)

1 pascal	= $1 N m^{-2}$ = $1 kg m^{-1} s^{-2}$
1 atmosphere	= 101.325 kilopascals = 760 torr (mm Hg) = 14.70 pounds per square inch
1 bar	= $10^5$ pascals