Common Conversion Factors

Chem20, Elementary Chemistry

Length (base unit)

SI unit: meter (m)

1 mile = 5280 feet
= 1.61 km

1 m = 39.37 inches

1 in. = 2.54 cm (definition)

1 Å = 10^{-10} m

Mass (base unit)

SI unit: kilogram (kg)

1 kg = 2.205 pounds (lb)

1 lb. = 453.6 g
= 16 oz.

1 ton = 2000 lb.

1 metric ton = 1000 kg = 1.103 tons

1 g = 6.022×10^{23} atomic mass units (amu)

Temperature (base unit)

SI unit: Kelvin (K)

K = °C + 273.15

°C = 5/9(°F – 32)

°F = 9/5(°C) + 32

Energy (derived unit)

SI unit: Joule (J)

1 J = 1 N · m

1 calorie = 4.184 J (definition)

1 L · atm = 101.33 J

Pressure (derived)

SI unit: Pascal (Pa)

1 Pa = 1 N/m^2

1 atm = 101325 Pa (definition)
= 1.01325 bar
= 760 torr (definition)
= 14.7 lb/in.^{2}

1 torr = 1 mmHg

Volume (derived)

SI unit: cubic meter (m^3)

1 L = 10^{-3} m^3
= 10^3 cm^3
= 1.0567 qt.

1 gallon = 4 quarts
= 8 pints
= 128 fluid ounces
= 3.7854 L

1 cm^3 = 1 mL (definition)