Common Conversion Factors

Chem1A, General Chemistry I

Length (base unit)

SI unit: meter (m)

1 km = 0.62137 mi
1 mi. = 5280 ft.
= 1.6093 km

1 m = 1.0936 yd.
1 in. = 2.54 cm (definition)
1 Å = 10^{-10} m

Mass (base unit)

SI unit: kilogram (kg)

1 kg = 2.2046 lb.
1 lb. = 453.59 g
= 16 oz.

1 amu = $1.660538782 \times 10^{-24}$ g

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 kg-m^2/s^2
1 J = 0.2390 cal.
= 1 C x 1 V

1 cal. = 4.184 J (definition)
1 eV = 1.602×10^{-19} J

Pressure (derived)

SI unit: Pascal (Pa)

1 Pa = 1 N/m^2
= 1 kg/m-s^2

1 atm = 101325 Pa
= 760 torr (definition)
= 14.70 lb/$in.^2$

1 torr = 1 mmHg

Volume (derived)

SI unit: cubic meter (m^3)

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

1 gal. = 4 qt.
= 3.7854 L

1 cm^3 = 1 mL (definition)

1 $in.^3$ = 16.4 cm^3