# Chemistry Conversion Units

**14-May-2009**

## Distance & Length

**2.54 centimeters per inch, 2.54 cm / in** **1 m = 39.37”**

I assume that you already know:

| | | | |
|---|---|---|---|
| 1 km | = 1000 m or $10^3$ m | 12 in | = 1 ft |
| 1 Meter | = 10 decimeters = 100 cm = 1000 millimeters | 3 ft | = 1 yd = 36 inches |
| 10 mm | = 1 cm | 5280 ft | = mile |
| 10 cm | = 1 dm = 100 mm | | |

## Temperature

**Farenheit** **Deg F = (Deg C * 9/5) + 32**

**Celsius** **Deg C = (Deg F – 32 deg) * 5/9**

**Celsius** **Dec C = Deg K - 273**

**Kelvin** **Deg K = Deg C + 273**

| | | | |
|---|---|---|---|
| **Freezing Point of Water** | **0 deg C** | **32 deg F** | **273 deg K** |
| **Boiling Point of Water** | **100 deg C** | **212 deg F** | **373 deg K** |

## Volume

**1 Liter = 1.056688209 Quart** **1 L = @1.057 Quart**

**Liter, cubic meter, cubic decimeter, cubic centimeter, cubic millimeter**

**Gallon, quart, pint, ounce**

I assume that you already know:

| | |
|---|---|
| 1 $mm^3$ = 1 $cm^3$ = 1 mL | 1 gallon = 4 quarts |
| 1000 mL = 1 Liter | 1 quart = 2 pints |
| 1 Liter = 10 decimeters - deci = ten | 1 pint = 16 ounces |
| 1 Liter = 100 centiliters - centi = hundred | 1 pint = 2 cups |
| 1 Liter = 1000 millimeters - milli = thousand | |
| 1000 L = 1 kL | |

## Weight and Mass

**453.59237 grams / pound** **@454 g / lb**

**Milligram, gram, kilogram** **Ounce, pound, ton**

I assume that you already know:

| | |
|---|---|
| 10 milligram = 1 centigram | 1 Ton = 2000 pounds |
| 1000 mg = 1 gram | 1 pound = 16 ounces |
| 1000 g = 1 kg | |

## Time

**Second, minute, hour, day, millisecond, year**

**Energy** 1 Calorie = 4.184 Joules 1 Cal raises 1 g of water 1 deg C

**Metric** Kilo, milli, micro, nano, mega, giga, tera, pico

**Energy and Work** Joule, Calorie [ foot-pount, kilowatt-hour, BTI ]

**Currancy** US Dollar, quarter, dime, nickel, penny
Euro, British Pound, Canadian Dollar

# Notes on performing Calculations

1. WRITE DOWN THE MAIN FORMULA: e.g. Density $= \frac{g}{cm^3} = \frac{\text{Mass (g)}}{\text{Volume (cm}^3\text{)}}$

2. Write down any derived formula for what is to be calculated:

$$\text{Volume (cm}^3\text{)} = \frac{\text{Mass (g)}}{\text{Density g/cm}^3}$$

3. Put in your values with units:

$$\text{Volume (cm}^3\text{)} = \frac{\text{Mass (g)}}{\text{Density g/cm}^3} = \frac{123.4\ g}{1.00\ cm^3} = 123.4\ g/cm^3$$

4. Cancel out the units – be sure your answer is in the correct units

5. Do The Math Add / Subtract Multiply / Divide Do it to many digits

6. Calculate the number of Significant Digits that need to be in the answer, use proper rounding.

7. Put the answer in the correct Scientific Notation [ Power of 10 ], if needed

**8. SHOW ALL MATH ALL FORMULAE ALL UNITS AND ALL UNITS CANCELING.**