

## Conversion Factors

NOTE: All equalities are EXACT (i.e.  $\infty$  number of SF), except those marked with an asterisk (\*)

**ENGLISH/US SYSTEM** *Be familiar with each unit, abbreviation and equality below.*

### Mass

1 ton = 2000 lb (pounds)  
1 lb = 16 oz (ounces)

### Length

1 mi (mile) = 5,280 ft (feet)  
1 yd (yard) = 3 ft  
1 ft = 12 in (inch)

### Volume

1 gal (gallon) = 4 qt (quart)  
1 qt = 2 pt (pint)  
1 pint = 2 cups  
1 qt = 32 fl oz (fluid ounces)

### COMMON METRIC SYSTEM BASE UNITS

**Length:** meter (m)  
**Mass:** gram (g)  
**Volume:** liter (L)

### SI SYSTEM UNITS

**Length:** meter (m)  
**Mass:** kilogram (kg)  
**Time:** second (s)  
**Temperature:** kelvin (K)  
**Amount:** mole (mol)

Any unit can be modified by adding a prefix to a base unit. The value of the prefixed unit is the numerical equivalent of the base unit (e.g. 1  $\mu$ L = .000001 L)

PREFIX	ABBR	NUMERICAL EQUIVALENT
mega	M	$10^6$ or 1,000,000
kilo	k	$10^3$ or 1,000
-	-	$10^0$ or 1
deci	d	$10^{-1}$ or .1
centi	c	$10^{-2}$ or .01
milli	m	$10^{-3}$ or .001
micro	$\mu$	$10^{-6}$ or .000,001
nano	n	$10^{-9}$ or .000,000,001

### TEMPERATURE CONVERSIONS:

$$T_F = 1.8 T_C + 32 \quad T_C = \frac{T_F - 32}{1.8} \quad T_K = T_C + 273$$

### OTHER IMPORTANT METRIC EQUALITIES:

1 cubic centimeter ( $\text{cm}^3$ ) = 1 mL

1 angstrom ( $\text{\AA}$ ) =  $10^{-10}$ m

### ENGLISH - METRIC BRIDGE EXAMPLES

#### Mass

1 lb = 453.6 g \*  
1 kg = 2.205 lb \*

#### Length

1 in = 2.54 cm  
1 m = 1.094 yd \*  
1 mi = 1.609 km \*

#### Volume

1 L = 1.0567 qt\*  
1  $\text{ft}^3$  = 28.32 L \*