

Metric Conversions

length
base unit: meter, m

1 000 000 m = 1 Mm
1000 m = 1 km
100 m = 1 hm
10 m = 1 dkm or dam
1 m = 1 m
0.1 m = 1 dm
0.01 m = 1 cm
0.001 m = 1 mm
 10^{-6} m = 1 μ m

1 m = 10^{-6} Mm
1 m = 0.001 km
1 m = 0.01 hm
1 m = 0.1 dkm or dam
1 m = 1 m
1 m = 10 dm
1 m = 100 cm
1 m = 1000 mm
1 m = 10^6 μ m

mass
base unit: gram, g

1 000 000 g = 1 Mg
1000 g = 1 kg
100 g = 1 hg
10 g = 1 dkg or dag
1 g = 1 g
0.1 g = 1 dg
0.01 g = 1 cg
0.001 g = 1 mg
 10^{-6} g = 1 μ g

1 g = 10^{-6} Mg
1 g = 0.001 kg
1 g = 0.01 hg
1 g = 0.1 dkg or dag
1 g = 1 g
1 g = 10 dg
1 g = 100 cg
1 g = 1000 mg
1 g = 10^6 μ g

volume
base unit: liter, L

1 000 000 L = 1 ML
1000 L = 1 kL
100 L = 1 hL
10 L = 1 dL or daL
1 L = 1 L
0.1 L = 1 dL
0.01 L = 1 cL
0.001 L = 1 mL
 10^{-6} L = 1 μ L

1 L = 10^{-6} ML
1 L = 0.001 kL
1 L = 0.01 hL
1 L = 0.1 dL or daL
1 L = 1 L
1 L = 10 dL
1 L = 100 cL
1 L = 1000 mL
1 L = 10^6 μ L

<p>Abbreviations:</p> <p>M = mega, million</p> <p>k = kilo, thousand</p> <p>h = hecto, hundred</p> <p>dk or da= deka, ten</p> <p style="text-align: center;">base unit</p> <p>d= deci, tenths</p> <p>c = centi, hundredths</p> <p>m= milli, thousandths</p> <p>u or μ = micro, millionths</p> <p>note: u is in typewriter form, in Greek it is the letter mu which is a fancy lower case m. Mu handwritten looks like a u with a tail at the beginning. μ</p> <p>Giga, G: 10^9, 1 Gm = 10^9 m 10^{-9} Gm = 1m</p> <p>nano, n: 10^{-9}, 1 nm = 10^{-9} m 10^9 nm = 1m</p> <p>pico, p: 10^{-12}, 1 pm = 10^{-12} m 10^{12} pm = 1 m</p> <p>femto, f: 10^{-15}, 1 fm = 10^{-15} m 10^{15} fm = 1m</p>	<p>Scientific Notation reminders:</p> <p>$1 \times 10^6 = 1\,000\,000$</p> <p>$1 \times 10^3 = 1\,000$</p> <p>$1 \times 10^2 = 100$</p> <p>$1 \times 10^1 = 10$</p> <p>$1 \times 10^0 = 1$</p> <p>$1 \times 10^{-1} = 0.1$</p> <p>$1 \times 10^{-2} = 0.01$</p> <p>$1 \times 10^{-3} = 0.001$</p> <p>$1 \times 10^{-6} = 0.000001$</p> <p>Remember: when you put numbers with scientific notation into the calculator, use the EE or EXP button and not the 10^x or y^x button. *****</p> <p>Temperature reminders: Metric temperature is measured in Celsius degrees. Water freezes at 0°C and boils at 100°C. Kelvin = $^\circ\text{C} + 273$ and is used with gases</p>	<p>Other important conversion things:</p> <p>for all fluids: cc= cubic centimeter $1\text{ cc} = 1\text{ cm}^3 = 1\text{ mL}$</p> <p>At 4°C water has a density of 1 g/ ml therefore we consider 1 ml of water to have the mass of 1 g.</p> <p>therefore for water: $1\text{ g} = 1\text{ cc} = 1\text{ cm}^3 = 1\text{ ml}$</p> <p>length³ indicates volume. This means that cm^3, m^3, mm^3, etc. indicate volume.</p> <p>When something equals something else, it can be turned into a conversion factor for dimensional analysis.</p> <p>Remember: all conversion factors have an unlimited number of significant figures.</p>
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