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Metric Conversion Chart

US customary and imperial to metric on one page: length, area, volume, weight, speed, pressure, energy and temperature

For: Students, teachers, cooks, travellers, engineers and anyone switching between US and metric units

allunitconversions.com/metric-conversion-chart
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EXACT DEFINITION	FORMULA	REVERSE	WORKED EXAMPLE
1 in = 2.54 cm, 1 lb = 0.453 592 37 kg, 1 US gal = 3.785 411 784 L (all exact)	value in "To" units = value × factor	value in "From" units = value ÷ factor	5 miles × 1.609344 = 8.05 km; 2 lb × 0.4535924 = 0.907 kg

Factors to 7 significant figures. US cups, pints, quarts and gallons differ from UK (imperial) ones.

Length

From	To	Multiply by
Inches (in)	cm	2.54
Centimetres (cm)	in	0.3937008
Feet (ft)	m	0.3048
Metres (m)	ft	3.28084
Yards (yd)	m	0.9144
Miles (mi)	km	1.609344
Kilometres (km)	mi	0.6213712
Nautical miles (nmi)	km	1.852

Area

From	To	Multiply by
Square inches (in^2)	cm^2	6.4516
Square feet (ft^2)	m^2	0.09290304
Square metres (m^2)	ft^2	10.76391
Acres (ac)	ha	0.4046856
Hectares (ha)	ac	2.471054
Square miles (mi^2)	km^2	2.589988

Volume (US)

From	To	Multiply by
US teaspoons (tsp)	mL	4.928922
US tablespoons (tbsp)	mL	14.78676
US fluid ounces (US fl oz)	mL	29.57353
US cups (US cup)	mL	236.5882
US pints (US pt)	L	0.4731765
US quarts (US qt)	L	0.9463529
US gallons (US gal)	L	3.785412
Litres (L)	US gal	0.2641721

Volume (UK and solid)

From	To	Multiply by
UK pints (UK pt)	L	0.5682612
UK gallons (UK gal)	L	4.54609
Cubic inches (in^3)	cm^3	16.38706
Cubic feet (ft^3)	m^3	0.02831685
Cubic feet (ft^3)	L	28.31685

Weight and mass

From	To	Multiply by
Ounces (oz)	g	28.34952
Grams (g)	oz	0.03527396
Pounds (lb)	kg	0.4535924
Kilograms (kg)	lb	2.204623
Stones (st)	kg	6.350293

Speed

From	To	Multiply by
Miles per hour (mph)	km/h	1.609344
Kilometres per hour (km/h)	mph	0.6213712
Knots (kn)	km/h	1.852
Metres per second (m/s)	km/h	3.6

Pressure

From	To	Multiply by
psi (psi)	kPa	6.894757
Bar (bar)	psi	14.50377
Atmospheres (atm)	kPa	101.325

Energy and power

From	To	Multiply by
Kilowatt-hours (kWh)	MJ	3.6
British thermal units (BTU)	kJ	1.055056
Kilocalories (kcal)	kJ	4.184
Horsepower (mech.) (hp)	kW	0.7456999
BTU per hour (BTU/h)	W	0.2930711

Temperature

°F = °C × 9/5 + 32; °C = (°F − 32) × 5/9; K = °C + 273.15

°C	°F	Meaning
-40	−40	Same on both scales
0	32	Water freezes
20	68	Room temperature
37	98.6	Body temperature
100	212	Water boils (sea level)
180	356	Moderate oven

Metric (SI) prefixes

Prefix	Symbol	Factor
giga	G	10^9
mega	M	10^6
kilo	k	10^3
hecto	h	10^2
deci	d	10^{-1}
centi	c	10^{-2}
milli	m	10^{-3}
micro	µ	10^{-6}
nano	n	10^{-9}

Sources and method

- **International Yard and Pound Agreement (1959)** — 1 in = 25.4 mm, 1 ft = 0.3048 m, 1 lb = 0.453 592 37 kg exactly
- **NIST Special Publication 811** — Guide for the Use of the International System of Units (www.nist.gov/pml/special-publication-811)
- **BIPM SI Brochure, 9th edition** — Definitions of the SI units, including the kelvin (www.bipm.org/en/publications/si-brochure)

Conversion values on this sheet are generated by the AllUnitConversions conversion library and automatically checked against the exact definitions above before the PDF is produced; reference tables are taken from the sources listed. Interactive version, corrections and more charts: **allunitconversions.com/metric-conversion-chart**