

Conversions

To convert to metric, multiply by the factor shown. To convert from metric divide by the factor shown.

Length

miles: kilometres	1.6093
yards: metres	0.9144
feet: metres	0.3048
inches: millimetres	25.4
inches: centimetres	2.54

Area

square miles: square kilometres	2.59
square miles: hectares	258.999
acres: square metres	4046.86
acres: hectares	0.4047
square yards: square metres	0.8361
square feet: square metres	0.0929
square feet: square centimetres	929.03
square inches: square millimetres	645.16
square inches: square centimetres	6.4516

Volume

cubic yards: cubic metres	0.7646
cubic feet: cubic metres	0.0283
cubic inches: cubic centimetres	16.3871

Temperature

Fahrenheit to Celsius	$(F - 32) \times 5/9$
Celsius to Fahrenheit	$(C \times 9/5) + 32$

Velocity

miles per hour: kilometres per hour	1.6093
feet per second: metres per second	0.3048
feet per minute: metres per second	0.0051

Fuel Consumption

gallons per mile: litres per kilometre	2.825
miles per gallon: kilometres per litre	0.354

SI Base Units

Base quantity		SI base unit	
Name	Symbol	Name	Symbol
length	l, x, r , etc.	metre	m
mass	m	kilogram	kg
time, duration	t	second	s
electric current	I, i	ampere	A
thermodynamic temperature	T	kelvin	K
amount of substance	n	mole	mol
luminous intensity	I_v	candela	cd

SI Derived Units

Examples of coherent derived units in the SI expressed in terms of base units

Derived quantity		SI coherent derived unit	
Name	Symbol	Name	Symbol
area	A	square metre	m^2
volume	V	cubic metre	m^3
speed, velocity	v	metre per second	m/s
acceleration	a	metre per second squared	m/s^2
wavenumber	$\sigma, \tilde{\nu}$	reciprocal metre	m^{-1}
density, mass density	ρ	kilogram per cubic metre	kg/m^3
surface density	ρ_A	kilogram per square metre	kg/m^2
specific volume	v	cubic metre per kilogram	m^3/kg
current density	j	ampere per square metre	A/m^2
magnetic field strength	H	ampere per metre	A/m
amount concentration ^(a) , concentration	c	mole per cubic metre	mol/m^3
mass concentration	$\rho,$	kilogram per cubic metre	kg/m^3
luminance	L_v	candela per square metre	cd/m^2
refractive index ^(b)	n	one	1
relative permeability ^(b)	μ_r	one	1

(a) In the field of clinical chemistry this quantity is also called substance concentration.

(b) These are dimensionless quantities, or quantities of dimension one, and the symbol "1" for the unit (the number "one") is generally omitted in specifying the values of dimensionless quantities.

SI Prefixes

Factor	Name	Symbol	Factor	Name	Symbol
10^{15}	peta	P	10^{-1}	deci	d
10^{12}	tera	T	10^{-2}	centi	c
10^9	giga	G	10^{-3}	milli	m
10^6	mega	M	10^{-6}	micro	μ
10^3	kilo	k	10^{-9}	nano	n
10^2	hecto	h	10^{-12}	pico	p
10^1	deca	da	10^{-15}	femto	f