

Common Conversion Factors

Length

1 yard = 3 ft, 1 fathom = 6 ft

	in	ft	mi	cm	m	km
1 inch (in) =	1	0.083	1.58×10^{-5}	2.54	0.0254	2.54×10^{-5}
1 foot (ft) =	12	1	1.89×10^{-4}	30.48	0.3048	
1 mile (mi) =	63,360	5,280	1	160,934	1,609	1.609
1 centimeter (cm) =	0.394	0.0328	6.2×10^{-6}	1	0.01	1.0×10^{-5}
1 meter (m) =	39.37	3.281	6.2×10^{-4}	100	1	0.001
1 kilometer (km) =	39,370	3,281	0.6214	100,000	1,000	1

Area

1 square mi = 640 acres, 1 acre = $43,650 \text{ ft}^2 = 4046.86 \text{ m}^2 = 0.4047 \text{ ha}$

1 ha = $10,000 \text{ m}^2 = 2.471 \text{ acres}$

	in ²	ft ²	mi ²	cm ²	m ²	km ²
1 in ² =	1		—	6.4516	—	—
1 ft ² =	144	1	—	929	0.0929	—
1 mi ² =	—	27,878,400	1	—	—	2.590
1 cm ² =	0.155	—	—	1	—	—
1 m ² =	1,550	10.764	—	10,000	1	—
1 km ² =	—	—	0.3861	—	1,000,000	1

Other Conversion Factors

1 ft³/sec = $.0283 \text{ m}^3/\text{sec} = 7.48 \text{ gal}/\text{sec} = 28.32 \text{ liters}/\text{sec}$

1 acre-foot = $43,560 \text{ ft}^3 = 1,233 \text{ m}^3 = 325,829 \text{ gal}$

1 m³/sec = $35.32 \text{ ft}^3/\text{sec}$

1 ft³/sec for one day = 1.98 acre-feet

1 m/sec = $3.6 \text{ km}/\text{hr} = 2.24 \text{ mi}/\text{hr}$

1 ft/sec = $0.682 \text{ mi}/\text{hr} = 1.097 \text{ km}/\text{hr}$

1 billion gallons per day (bgd) = 3.785 million m³ per day

1 atmosphere = $1.013 \times 10^5 \text{ N}/\text{m}^2 = \text{approximately } 1 \text{ bar}$

1 bar = approx. $10^5 \text{ N}/\text{m}^2 = 10^5 \text{ pascal (Pa)}$

Commonly Used Multiples of 10

Prefix (Symbol)	Amount	Prefix (Symbol)	Amount
exa (E)	10^{18} (million trillion)	centi (c)	10^{-2} (one-hundredth)
peta (P)	10^{15} (thousand trillion)	milli (m)	10^{-3} (one-thousandth)
tera (T)	10^{12} (trillion)	micro (μ)	10^{-6} (one-millionth)
giga (G)	10^9 (billion)	nano (n)	10^{-9} (one-billionth)
mega (M)	10^6 (million)	pico (p)	10^{-12} (one-trillionth)
kilo (k)	10^3 (thousand)		

Volume

	in ³	ft ³	yd ³	m ³	qt	liter	barrel	gal. (U.S.)
1 in ³ =	1	—	—	—	—	0.02	—	—
1 ft ³ =	1,728	1	—	.0283	—	28.3	—	7.480
1 yd ³ =	—	27	1	0.76	—	—	—	—
1 m ³ =	61,020	35.315	1.307	1	—	1,000	—	—
1 quart (qt) =	—	—	—	—	1	0.95	—	0.25
1 liter (l) =	61.02	—	—	—	1.06	1	—	0.2642
1 barrel (oil) =	—	—	—	—	168	159.6	1	42
1 gallon (U.S.) =	231	0.13	—	—	4	3.785	0.02	1

Energy and Power

- 1 kilowatt-hour = 3,413 Btus = 860,421 calories
- 1 Btu = 0.000293 kilowatt-hour = 252 calories = 1,055 joule
- 1 watt = 3.413 Btu/hr = 14.34 calories/min
- 1 calorie = the amount of heat necessary to raise the temperature of 1 gram (1 cm³) of water 1 degree Celsius
- 1 quadrillion Btu = (approximately) 1 exajoule
- 1 joule = 0.239 calorie = 2.778×10^{-7} kilowatt-hour

Mass and Weight

- 1 pound = 453.6 grams = 0.4536 kilogram = 16 ounces
- 1 gram = 0.0353 ounce = 0.0022 pound
- 1 short ton = 2,000 pounds = 907.2 kilograms
- 1 long ton = 2,240 pounds = 1,008 kilograms
- 1 metric ton = 2,205 pounds = 1,000 kilograms
- 1 kilogram = 2.205 pounds