

# Conversion Factors and Tables

## Length

Unit of measure	Symbol
millimeter	mm
centimeter	cm
meter	m
kilometer	km
inch	in
foot	ft
mile	mi

## Conversion table

mm	cm	m	km	in	ft	mi
1	0.1	0.001	--	0.0394	0.003	--
10	1	0.01	--	0.394	0.033	--
1000	100	1	0.001	39.37	3.281	--
--	--	1000	1	--	3,281	0.621
25.4	2.54	0.0254	--	1	0.083	--
304.8	30.48	0.305	--	12	1	--
--	--	1609	1.609	--	5280	1

## Area

Unit of measure	Symbol
square meter	m <sup>2</sup>
hectare	ha
square kilometer	km <sup>2</sup>
square foot	ft <sup>2</sup>
acre	acre
square mile	mi <sup>2</sup>

## Conversion table

m <sup>2</sup>	ha	km <sup>2</sup>	ft <sup>2</sup>	acre	mi <sup>2</sup>
1	--	--	10.76	--	--
10,000	1	0.01	107,640	2.47	0.00386
1x10 <sup>6</sup>	100	1	--	247	0.386
0.093	--	--	1	--	--
4,049	0.405	--	43,560	1	0.00156
--	259	2.59	--	640	1

## Volume

Unit of measure	Symbol
cubic kilometer	km <sup>3</sup>
cubic meter	m <sup>3</sup>
liter	L
million U.S. gallons	Mgal
acre-foot	acre-ft
cubic foot	ft <sup>3</sup>
gallon	gal

## Conversion table

km <sup>3</sup>	m <sup>3</sup>	L	Mgal	acre-ft	ft <sup>3</sup>	gal
1	1x10 <sup>9</sup>	--	--	811,000	--	--
--	1	1000	--	--	35.3	264
--	0.001	1	--	--	0.0353	0.264
--	--	--	1	3.07	134,000	1x10 <sup>6</sup>
--	1,233	--	0.3259	1	43,560	325,848
--	0.0283	28.3	--	--	1	7.48
--	--	3.785	--	--	0.134	1

## Flow Rate

Unit of measure	Symbol
cubic kilometers/year	km <sup>3</sup> /yr
cubic meters/second	m <sup>3</sup> /s (m <sup>3</sup> /sec)
liters/second	L/s (L/sec)
million U.S. gallons/day	mgd (Mgal/d)
U.S. gallons/minute	gpm (gal/min)
cubic feet/second	cfs (ft <sup>3</sup> /s)
acre-feet/day	acre-ft/day

### Conversion table

km <sup>3</sup> /yr	m <sup>3</sup> /s	L/s	mgd	gpm	cfs	acre-ft/day
1	31.7	—	723	—	1,119	2,220
0.0316	1	1000	22.8	15,800	35.3	70.1
—	0.001	1	0.0228	15.8	0.0353	(0.070)
—	0.044	43.8	1	694	1.547	3.07
—	—	0.063	—	1	0.0022	0.0044
—	0.0283	28.3	0.647	449	1	1.985
—	—	14.26	0.326	226.3	0.504	1

## Weights

Unit of measure	Symbol
ton (short)	T
pound	lb
kilogram	kg
gram	g
milligram	mg
microgram	µg

### Conversion table

T	lb	kg	g	mg	µg
1	2000	907	—	—	—
	1	0.454	453.592	—	—
	2.205	1	1000	1x10 <sup>6</sup>	—
		0.001	1	1000	1x10 <sup>6</sup>
			0.001	1	1000
				0.001	1

**Note:** 1 short ton = 2,000 lb  
 1 long ton = 2,240 lb  
 1 metric ton = 1,000,000 g = 1,000 kg = 2,205 lb

## Miscellaneous

1 acre-inch	= 27,154 gallons
1 horsepower	= 0.746 kilowatts
1 horsepower	= 550 foot-pounds per second
degrees C	= 5/9 (F° - 32°)
degrees F	= 9/5 (C° + 32°)
1 gram	= 15.43 grains
1 ppm	= 8.345 pounds per million gallons of water = 0.2268 pounds per acre-inch
1 U.S. gallon	= 8.345 pounds

**parts per million (ppm)**—1 ppm is 1 part by weight in 1 million parts by weight.

**milligrams per liter (mg/L)**—1 mg/L is 1 milligram (weight) in 1 million parts (volume), i.e., 1 liter. Therefore, ppm = mg/L when a solution has the same specific gravity as water. Generally, substances in solution up to concentrations of about 7,000 mg/L do not materially change the specific gravity of water. To that limit ppm and mg/L are numerically interchangeable. A 1-percent solution has a concentration of 10,000 ppm, which equals 1 gm in 100 grams of water.

**Electrical conductivity**—Electrical conductance is expressed in mhos (reciprocal ohms); electrical conductivity (EC) is expressed in mhos/cm. 1 mhos/cm = 1,000 millimhos/cm (mmhos/cm) = 1,000,000 micromhos per centimeter (umhos/cm). 1.0 mmho/cm equals a concentration of approximately 640 ppm dissolved salts.