Table 1. Conversion from customary to metric units (in alphabetical order).

Multiply Customary Unit	Abbreviation	By	To Obtain Metric Unit
acre	ac	4.047×10^3	m^2
		0.404 7	ha (hectare)
acre-foot	ac-ft	1233	m^3
atmosphere	atm	101.3	kPa (kilopascal)
bar	bar	100.0	kPa
British thermal unit	Btu	1.055	kJ (kilojoule)
British thermal units per cubic foot	Btu/cu ft	37.26	kJ/m^3
British thermal units per gallon	Btu/gal	278.7	kJ/m^3
		0.278 7	kJ/L
British thermal units per hour	Btu/hr	0.2931	W (watt)
British thermal units per hour per square foot	Btu/hr/sq ft	3.155	$J/m^2 \cdot s$
British thermal units per pound	Btu/lb	2.326	kJ/kg
British thermal units per ton	Btu/ton	1.163	J/kg
calorie international	cal	4.187	J (joule)
15°C		4.186	J
20°C		4.182	J
calories per second	cal/sec	4.187	W
centipoise	cP	1.000×10^{-3}	Pa·s
cubic feet per gallon	cu ft/gal	7.482	m^3/m^3
		7.482×10^{-3}	m^3/L
cubic feet per hour	cfh or cu ft/hr	7.867×10^{-6}	m^3/s
		7.867×10^{-3}	L/s
cubic feet per hour per square foot	cfh/sq ft	8.467×10^{-5}	$m^3/m^2 \cdot s$
		304.8	$L/m^2 \cdot h$
cubic feet per million gallons	cu ft/mil. gal	7.482	mL/m^3
cubic feet per minute	cfm or cu ft/min	$4.719\ 10^{-4}$	m^3/s
		0.471 9	L/s
cubic feet per minute per foot	cfm/ft	1.549	L/m ·s
cubic feet per minute per thousand cubic feet	cfm/1000 cu ft	1.667×10^{-2}	$L/m^3 \cdot s$
cubic feet per minute per thousand gallons	cfm/1000 gal	0.124 7	$L/m^3 \cdot s$
cubic feet per pound	cu ft/lb	6.243×10^{-2}	m^3/kg
cubic feet per second	cfs	2.832×10^{-2}	m^3/s
		28.32	L/s
cubic feet per second per acre	cfs/ac	6.997×10^{-6}	$m^3/m^2 \cdot s$
		69.97	L/ha·s
cubic feet per second per square mile	cfs/sq mile	1.093×10^{-8}	$m^3/m^2 \cdot s$
		0.109 3	L/ha·s
cubic foot	cu ft	2.832×10^{-2}	m^3
		28.32	L
cubic inch	cu in.	16.39×10^{-6}	m^3
		16.39	mL

cubic yard	cu yd	0.764 6	m^3
degrees Fahrenheit	°F	0.555 6(°F − 32)	°C (degrees Celsius)
Rankine	°R	0.555 6	K (Kelvin)
feet of head	ft	0.304 8	m
feet per hour	ft/hr	8.467×10^{-5}	m/s
feet per minute	ft/min or fpm	5.080	mm/s
feet per second	ft/sec or fps	0.304 8	m/s
feet per second squared	ft/sec^2	0.304 8	m/s^2
feet per year	ft/yr	0.304 8	m/a (meters per annum)
foot	ft	0.304 8	m
foot-head	ft-head	2989	Pa
foot-pound	ft-lb	1.356	N·m
foot-pounds per inch	ft-lb/in.	53.38	J/m
foot-pounds per minute	ft-lb/min	2.259×10^{-2}	W
foot-pounds per second	ft-lb/sec	1.355	W
gallon	gal	3.785×10^{-3}	m^3
		3.785	L
gallons per day	gpd	4.381×10^{-5}	L/s
		3.785×10^{-3}	m^3/d
gallons per day per acre	gpd/ac	1.083×10^{-11}	$m^3/m^2 \cdot s$
		1.083×10^{-8}	$L/m^2 \cdot s$
		9.353	L/ha·d
gallons per day per capita	gpd/cap	3.785	L/cap·d
gallons per day per linear foot	gpd/ft	1.437×10^{-7}	$m^3/m \cdot s$
		1.437×10^{-4}	L/m·s
		1.242×10^{-2}	$m^3/m \cdot d$
gallons per day per foot of manhole diameter per foot-head	gpd/ft/ft-head	4.074×10^{4}	(mL/m·d)/m
gallons per day per inch of diameter per mile	gpd/in. dia/mile	92.60	(mL/m·d)/m
gallons per day per mile	gpd/mile	2.720×10^{-11}	$m^3/m \cdot s$
		2.352	mL/m·d
gallons per day per square foot	gpd/sq ft	4.715×10^{-7}	$m^3/m^2 \cdot s$ or m/s
		4.074×10^{-2}	$m^3/m^2 \cdot d$ or m/d
		40.74	$L/m^2 \cdot d$
gallons per day per thousand square feet	gpd/1000 sq ft	4.074×10^{-2}	$L/m^2 \cdot d$
gallons per hour	gph	1.051×10^{-6}	m^3/s
		1.051	mL/s
gallons per hour per foot of diameter per foot-head	gph/ft dia/ft-head	11.32	(mL/m·s)/m
gallons per hour per inch diameter per thousand feet	gph/in. dia/1000 ft	488.9	(mL/m·h)/m
gallons per million gallons	gal/mil. gal	1.000	mL/m^3
gallons per minute	gpm	6.308×10^{-5}	m^3/s
		6.308×10^{-2}	L/s
		5.451	m^3/d
gallons per minute per acre	gpm/ac	0.155 8	L/ha·s
gallons per minute per cubic foot	gpm/cu ft	2.228	$L/m^3 \cdot s$

Table 1. Conversion from customary to metric units (in alphabetical order) (*continued*).

Multiply Customary Unit	Abbreviation	By	To Obtain Metric Unit
gallons per minute per foot	gpm/ft	2.070×10^{-4}	$m^3/m{\cdot}s$
		0.207 0	L/m·s
gallons per minute per square foot	gpm/sq ft	6.791×10^{-4}	m/m·s
		0.679 1	$L/m^2{\cdot}s$
		58.67	$m^3/m^2{\cdot}d$
gallons per pound	gal/lb	8344	mL/kg
gallons per ton	gal/ton	4.173	mL/kg
grain	gr	64.80	mg
grains per gallon	gr/gal	17.12	g/m^3
		17.12	mg/L
hectare	ha	1.000×10^4	m^2
horsepower	hp	0.745 7	kW
horsepower-hour	hp-hr	2.685	MJ
horsepower-hours per pound	hp-hr/lb	5.919	MJ/kg
horsepower-hours per thousand cubic feet	hp-hr/1000 cu ft	26.34	W/m^3
horsepower-hours per thousand gallons	hp-hr/1000 gal	0.710 3	kJ/L
horsepower-hours per thousand pounds	hp-hr/1000 lb	5.919	kJ/kg
horsepower per gallon per minute	hp/gpm	11.82	MJ/m^3
		11.82	kJ/L
horsepower per million gallons	hp/mil. gal	0.197	W/m^3
		1.970×10^{-4}	W/L
horsepower per thousand gallons	hp/1000 gal	0.197	kW/m^3
inch	in.	25.40	mm
inches of water	in. H_2O	0.248 8	kPa
inches of mercury	in. Hg	3.377	kPa
inches per foot	in./ft	8.333	%
inches per hour	in./hr	25.40	mm/h
inches per year	in./yr	25.40	mm/a (millimeters per annum)
kilowatt-hour	kWh	3.600	MJ
kilowatt-hours per day	kWh/d	41.67	W
kilowatt-hours per gallon	kWh/gal	951.1	MJ/m^3
		0.951 1	MJ/L
kilowatt-hours per million gallons	kWh/mil. gal	951.1	J/m^3
		0.951 1	J/L
kilowatt-hours per pound	kWh/lb	7.936	MJ/kg
kilowatt-hours per thousand pounds	kWh/1000 lb	7.936	kJ/kg
kilowatt-hours per ton	kWh/ton	3.969	kJ/kg
kip	kip	4.448	kN (kilonewton)
kip-feet	kip-ft	1.356	kN·m
kip-feet per second	kip-ft/sec	1.356	kN·m/s
kips per foot	kip/ft	14.59	kN/m
kips per square foot	kip/sq ft	47.88	kPa

micron	μ	1.000	μm
mil	mil	25.40	μm
mile	mile	1.609	km
miles per hour	mph	0.446 9	m/s
		1.609	km/h
million gallons	mil. gal	3.785×10^3	m^3
		3.785	ML
million gallons per day	mgd	4.383×10^{-2}	m^3/s
		43.83	L/s
		3.785×10^3	m^3/d
		3.785	ML/d
million gallons per day per acre	mgd/ac	1.083×10^{-5}	$m^3/m^2 \cdot s$
		9.353×10^3	$m^3/ha \cdot d$
		9.353	ML/ha·d
most probable number per hundred milliliters	MPN/100 mL	10.00	MPN/L
parts per billion	ppb	1.00 (app.)	μg/L
		1.000	μg/kg
parts per million	ppm	1.00 (app.)	mg/L
		1.000	mg/kg
pound (force)	lbf	4.448	N
pound (mass)	lb	0.453 6	kg
pound-foot	lb-ft	1.356	N·m
pound-feet per second	lb-ft/sec	1.356	N·m/s
pounds per day per capita	lb/d/cap	0.453 6	kg/cap·d
pounds per cubic foot	lb/cu ft	16.02	kg/m^3
pounds per thousand cubic feet	lb/1000 cu ft	16.02	g/m^3
pounds per cubic yard	lb/cu yd	0.593 3	kg/m^3
pounds per day	lb/d	5.250	mg/s
		0.453 6	kg/d
pounds per day per acre	lb/d/ac	0.112 1	$g/m^2 \cdot d$
pounds per day per acre-foot	lb/d/ac-ft	0.367 7	$g/m^3 \cdot d$
pounds per day per cubic foot	lb/d/cu ft	16.02	$kg/m^3 \cdot d$
pounds per day per pound	lb/d/lb	11.57	mg/kg·s
pounds per day per square foot	lb/d/sq ft	56.51	$mg/m^2 \cdot s$
		4.882	$kg/m^2 \cdot d$
pounds per day per thousand cubic feet	lb/d/1000 cu ft	1.602×10^{-2}	$kg/m^3 \cdot d$
pounds per day per thousand square feet	lb/d/1000 sq ft	4.882	$g/m^2 \cdot d$
pounds per foot	lb/ft	1.488	kg/m
pounds per foot per foot of diameter	lb/ft/ft dia	47.88	(N/m)/m
pounds per gallon	lb/gal	0.119 8	kg/L
pounds per hour	lb/hr	1.260×10^{-4}	kg/s
		0.453 6	kg/h
pounds per hour per square foot	lb/hr/sq ft	4.882	$kg/m^2 \cdot h$
		1.356	$g/m^2 \cdot s$

Table 1. Conversion from customary to metric units (in alphabetical order) (*continued*).

Multiply Customary Unit	Abbreviation	By	To Obtain Metric Unit
pounds per hour per cubic foot	lb/hr/cu ft	4.450×10^{-6}	kg/L·s
		16.02	$kg/m^3 \cdot h$
pounds per million gallons	lb/mil. gal	0.119 8	g/m^3
		0.119 8	mg/L
pounds per pound	lb/lb	1000	g/kg
pounds per square foot (mass dose)	lb/sq ft	4.883	kg/m^2
pounds per square foot (force)	lb/sq ft	47.88	Pa
pounds per square inch (force)	psi	6895	Pa
pounds per thousand cubic feet	lb/1000 cu ft	16.02	g/m^3
pounds per thousand gallons	lb/1000 gal	0.119 8	g/m^3
pounds per ton	lb/ton	0.500	g/kg
pounds per year per acre	lb/yr/ac	1.121	kg/ha·a
pounds per year per cubic foot	lb/yr/cu ft	16.02	$kg/m^3 \cdot a$
pounds per year per square foot	lb/yr/sq ft	4.882	$kg/m^2 \cdot a$
pound-seconds per square foot	lb-sec/sq ft	47.88	Pa·s
pound-square feet per second	lb-sq ft/sec	4.883	$kg \cdot m^2/s$
revolutions per minute	rpm	1.000	r/min
revolutions per second	rps	1.000	r/s
slug	slug	14.59	kg
square foot	sq ft	9.290×10^{-2}	m^2
square feet per capita	sq ft/cap	9.290×10^{-2}	m^2/cap
square feet per cubic foot	sq ft/cu ft	3.281	m^2/m^3
square feet per foot	sq ft/ft	0.304 8	m^2/m
square feet per second	sq ft/sec	9.290×10^{-2}	m^2/s
square inch	sq in.	645.2	mm^2
square mile	sq mile	2.590	km^2
square yard	sq yd	0.836 1	m^2
ton (long)	ton	1.016	Mg
ton (short)	ton	0.907 2	Mg
		907.2	kg
tons per acre	ton/ac	0.224 2	kg/m^2
		2.242	Mg/ha
tons per cubic yard	ton/cu yd	1.187	Mg/m^3
watt-hour	W-hr	3.600	J
watts per square foot	W/sq ft	10.76	W/m^2
yard	yd	0.914 4	m