

Conversion Factors

Equivalents for teaspoonful, tablespoonful, and cup

A measuring cup and measuring spoons, the latter obtainable in nests of several sizes, are useful in making dilutions under practical conditions where great accuracy is not required. The values given below also are useful in transposing the precise measurements of the laboratory into commonly used and understood units when an insecticide is recommended to home gardeners. The values as given are those recognized by the Bureau of Standards.

Conversions

3 teaspoonfuls	=	1 tablespoonful
2 tablespoonfuls	=	1 fluid ounce
16 tablespoonfuls	=	1 cup
8 fluid ounces	=	1 cup
1/2 fluid ounce	=	1 tablespoonful
14.8 milliliters	=	1 tablespoonful
1/2 pint	=	1 cup = 8 oz = 237 milliliters

Equivalents of weight

Avoirdupois, U.S. and Imperial		Metric
1 ounce	=	28.3495 grams
1 pound	=	453.59 grams/0.45359 kilogram
0.0327 ounce	=	1 gram
35.2740 ounces	=	1 kilogram
2.2046 pounds	=	1 kilogram

Liquid measure—United States

16 fluid ounces	=	1 pint (pt)
2 pints	=	1 quart (qt)
4 quarts	=	1 gallon (gal) = 231 cubic inches
1 liter	=	1.056 US liquid qt (0.878 English liquid qt)
1 gallon	=	3.785 liters (English gallon = 4.543 liters)

Area measure—United States

144 square inches (in ²)	=	1 square foot (ft ²)
9 square feet	=	1 square yard (yd ²)
30.25 square yards	=	1 square rod
43,560 square feet	=	1 acre
4,840 square yards	=	1 acre
160 square rods	=	1 acre
208.71 × 208.71 feet	=	1 acre
320 rods	=	1 mile
5,280 feet	=	1 mile
640 acres	=	1 section; 1 square mile

Useful metric—U.S. conversions

1 meter	=	1.093 yd (3.281 ft) (39.370 inches)
1 kilometer	=	0.621 mi
1 yard	=	0.91 meter
1 liter	=	1.056 U.S. liquid qt (0.878 English liquid qt)
1 gallon	=	3.785 liters (English gallon = 4.543 liters)

Capacity of sprayer tanks

The capacity of the tanks of hand or power sprayers, in gallons, may be calculated as follows:

Cylindrical tanks: multiply length by square of the diameter, in inches, by 0.0034.

Rectangular tanks: multiply length by width by depth, in inches, by 0.004329.

Tanks with elliptical cross section: multiply length by short diameter by long diameter, in inches, by 0.0034.

According to United States government standards, the following are the weights avoirdupois for single bushels of the specified grains:

wheat—60 pounds
rye—56 pounds
barley—48 pounds
oats—32 pounds
corn—56 pounds

Some states have specifications varying from these.

Conversion factors

To change:	To:	Multiply by:
inches	centimeters	2.54
feet	meters	0.305
miles	kilometers	1.609
meters	inches	39.37
kilometers	miles	0.621
square inches	square centimeters	6.452
square yards	square meters	0.836
square centimeters	square inches	0.155
square meters	square yards	1.196
cubic inches	cubic centimeters	16.387
cubic yards	cubic meters	0.765
cubic centimeters	cubic inches	0.061
cubic meters	cubic yards	1.308
fluid ounces	cubic centimeters	29.57
quarts	liters	0.946
cubic centimeters	fluid ounces	0.034
liters	quarts	1.057
grains	milligrams	64.799
ounces (avoirdupois)	grams	28.35
pounds (avoirdupois)	kilograms	0.454
grams	grains	15.432
kilograms	pounds	2.205

Gallons per acre

gal/acre	cc/ft ²	lb/acre	g/ft ²
1	0.0869	1	0.0104
2	0.1738	2	0.0208
3	0.2607	3	0.0312
4	0.3476	4	0.0416
5	0.4345	5	0.0520
6	0.5214	6	0.0624
7	0.6083	7	0.0728
8	0.6952	8	0.0832
9	0.7821	9	0.0936
10	0.8690	10	0.1040

Circles and globes

To find the circumference of a circle, multiply the diameter by 3.1416 or pi times radius squared: ($\delta \times r^2$).

To find the area of a circle, multiply the square of the diameter by 0.7854.

To find the surface of a globe, multiply the square of the diameter by 3.1416.

To find the cubic contents of a globe, multiply the cube of the diameter by 0.5236.

Common measures

Cubic measure

1,728 cubic inches = 1 cubic foot
27 cubic feet = 1 cubic yard
144 cubic inches = 1 board foot
128 cubic feet = 1 cord

Linear measure

1 inch = 2.54 cm = 25.4 mm
1 foot = 12 in = 30.5 cm = 0.3048 m
1 yard = 3 ft = 0.9144 m
1 rod = 5.5 yd = 16.5 ft = 5.029 m
1 mile = 160 rods = 1760 yd = 5280 ft = 1.6094 km
1 micron = 0.001 mm
1 millimeter = 0.0394 in = about 1/25 in
1 centimeter = 10 mm = 0.3937 in = about 2/5 in
1 decimeter = 10 cm = about 4 in
1 meter = 10 dm = 3.28 ft = 39.37 in

Square measure

1 square foot = 144 in² = 0.0929 m²
1 square yard = 9 ft² = 0.8361 m²
1 square rod = 272.25 ft² = 30.25 yd² = 25.293 m²
1 acre = 43,560 ft² = 4,840 yd² = 160 rod² = 0.4047 hectare
1 square mile = 640 a = 259 hectares
1 square meter = 1550 in²
1 hectare = 2.471 a = 10,000 m²

Dry measure

1 pint = 33.60 cubic inches = 0.5505 liter
2 pints = 1 quart = 67.20 cubic inches = 1.1012 liters
8 quarts = 1 peck = 537.61 cubic inches = 8.8096 liters
4 pecks = 1 bushel = 2,150.42 cubic inches = 35.2383 liters
1 British dry quart = 1.032 U.S. dry quarts

*Note: A liquid pint contains 28.875 cubic inches or 474 ml.

Weights and volumes of water

One cubic inch of water weighs 0.03617 pound.

One cubic foot weighs 62.42 pounds.

One cubic foot equals 7.48052 gallons.

One gallon weighs 8.345 pounds.

One gallon equals 231 cubic inches.

One liquid quart equals 57.75 cubic inches.

Conversions

1 acre-foot of water weighs 2,719,230 pounds.

Toxicant (lbs/acre)	=	Parts per million	=	Parts per billion
5.453		2.0		2,000
2.727		1.0		1,000
2.455		0.9		900
2.183		0.8		800
1.911		0.7		700
1.639		0.6		600
1.367		0.5		500
1.095		0.4		400
0.823		0.3		300
0.551		0.2		200
0.279		0.1		100
0.24		0.09		90
0.21		0.08		80
0.19		0.07		70
0.16		0.06		60
0.13		0.05		50
0.10		0.04		40
0.082		0.03		30
0.055		0.02		20
0.027		0.01		10
0.024		0.009		9
0.021		0.008		8
0.019		0.007		7
0.016		0.006		6
0.013		0.005		5
0.010		0.004		4
0.0082		0.003		3
0.0055		0.002		2
0.0027		0.001		1