

## Common Weights and Measures

### Length

#### Metric System

1 millimeter = 1/1,000 meter

1 centimeter = 1/100 meter

1 decimeter = 1/10 meter

1 meter (basic unit of length)

1 dekameter = 10 meters

1 kilometer = 1,000 meters

#### American and British Units

1 inch = 1/36 yard = 1/12 foot

1 foot = 1/3 yard

1 yard (basic unit of length)

1 rod = 5 1/2 yards

1 furlong = 220 yards = 40 rods

1 mile = 1,760 yards = 5,280 feet

1 fathom = 6 feet

1 nautical mile = 6,076.1 feet

#### Conversion Factors

1 centimeter = 0.39 inch

1 inch = 2.54 centimeters

1 meter = 39.37 inches

1 foot = 0.305 meter

1 meter = 3.28 feet

1 yard = 0.914 meter

1 meter = 1.094 yards

1 kilometer = 0.62 mile

1 mile = 1.609 kilometers

<b>Area</b>
<b>Metric System</b>
1 square centimeter = 1/10,000 square meter
1 square decimeter = 1/100 square meter
1 square meter (basic unit of area)
1 are = 100 square meters
1 hectare = 10,000 square meters = 100 ares
1 square kilometer = 1,000,000 square meters
<b>American and British Units</b>
1 square inch = 1/1,296 square yard = 1/144 square foot
1 square foot = 1/9 square yard
1 square yard (basic unit of area)
1 square rod = 30 1/4 square yards
1 acre = 4,840 square yards = 160 square rods
1 square mile = 3,097,600 square yards = 640 acres
<b>Conversion Factors</b>
1 square centimeter = 0.155 square inch
1 square inch = 6.45 square centimeters
1 acre = 0.405 hectare
1 hectare = 2.47 acres
1 square kilometer = 0.386 square mile
1 square mile = 2.59 square kilometers
<b>Volume and Capacity (Liquid and Dry)</b>
<b>Metric System</b>
1 cubic centimeter = 1/1,000,000 cubic meter
1 cubic decimeter = 1/1,000 cubic meter
1 cubic meter = 1 stere (basic unit of volume)
1 milliliter = 1/1,000 liter = 1 cubic centimeter

1 centiliter = 1/100 liter
1 deciliter = 1/10 liter
1 liter = 1 cubic decimeter (basic unit of capacity)
1 dekaliter = 10 liters
1 hectoliter = 100 liters = 1/10 cubic meter
<b>American and British Units</b>
1 cubic inch = 1/46,656 cubic yard = 1/1,728 cubic foot
1 cubic foot = 1/27 cubic yard
1 cubic yard (basic unit of volume)
1 U.S. fluid ounce = 1/128 U.S. gallon = 1/16 U.S. pint
1 British imperial fluid ounce = 1/160 imperial gallon = 1/20 imperial pint
1 pint = 1/8 gallon = 1/2 quart
1 quart = 1/4 gallon
1 U.S. gallon (basic unit of liquid capacity in the United States) = 231 cubic inches
1 imperial gallon (basic unit of liquid capacity in some Commonwealth nations) = 277.4 cubic inches
1 dry pint = 1/64 bushel = 1/2 dry quart
1 dry quart = 1/32 bushel = 1/8 peck
1 peck = 1/4 bushel
1 U.S. bushel (basic unit of dry capacity in the United States) = 2,150.4 cubic inches
1 imperial bushel (basic unit of dry capacity in some Commonwealth nations) = 2,219.4 cubic inches
<b>Conversion Factors</b>
1 cubic centimeter = 0.06 cubic inch
1 cubic inch = 16.4 cubic centimeters
1 cubic yard = 0.765 cubic meter
1 cubic meter = 1.3 cubic yards
1 milliliter = 0.034 fluid ounce
1 fluid ounce = 29.6 milliliters

1 U.S. quart = 0.946 liter
1 liter = 1.06 U.S. quarts
1 U.S. gallon = 3.8 liters
1 imperial gallon = 1.2 U.S. gallons = 4.5 liters
1 liter = 0.9 dry quart
1 dry quart = 1.1 liters
1 dekaliter = 0.28 U.S. bushel
1 U.S. bushel = 0.97 imperial bushel = 3.5 dekaliters
<b>Weight (Mass)</b>
<b>Metric System</b>
1 milligram = 1/1,000,000 kilogram = 1/1,000 gram
1 centigram = 1/100,000 kilogram = 1/100 gram
1 decigram = 1/10,000 kilogram = 1/10 gram
1 gram = 1/1,000 kilogram
1 dekagram = 1/100 kilogram = 10 grams
1 hectogram = 1/10 kilogram = 100 grams
1 kilogram (basic unit of weight or mass)
1 metric ton = 1,000 kilograms
<b>American and British Units: Avoirdupois</b>
1 grain = 1/7,000 pound = 1/437.5 ounce
1 dram = 1/256 pound = 1/16 ounce
1 ounce = 1/16 pound
1 pound (basic unit of weight or mass)
1 short hundredweight = 100 pounds
1 long hundredweight = 112 pounds
1 short ton = 2,000 pounds
1 long ton = 2,240 pounds
<b>American and British Units: Troy and Apothecaries'</b>

1 grain = 1/7,000 avoirdupois pound = 1/5,760 troy or apothecaries' pound
1 apothecaries' scruple = 20 grains = 1/3 dram
1 pennyweight = 24 grains = 1/20 troy ounce
1 apothecaries' dram = 60 grains = 1/8 apothecaries' ounce
1 troy or apothecaries' ounce = 480 grains = 1/12 troy or apothecaries' pound
1 troy or apothecaries' pound = 5,760 grains = 5,760/7,000 avoirdupois pound
<b>Conversion Factors</b>
1 milligram = 0.015 grain
1 grain = 64.8 milligrams
1 gram = 0.035 avoirdupois ounce
1 avoirdupois ounce = 28.35 grams
1 troy or apothecaries' pound = 0.82 avoirdupois pound = 0.37 kilogram
1 avoirdupois pound = 1.2 troy or apothecaries' pounds = 0.45 kilogram
1 kilogram = 2.205 avoirdupois pounds
1 short ton = 0.9 metric ton
1 metric ton = 1.1 short tons

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