

# Metric System of Measurements

## Measures of Length

10 millimeters (mm.)	=	1 centimeter (cm.)
10 centimeters	=	1 decimeter (dm.)
10 decimeters	=	1 meter (m.)
1000 meter	=	1 kilometer (km.)

## Measure of Weight

10 milligrams (mg.)	=	1 centigram (cg.)
10 centigrams	=	1 decigram (dg.)
10 decigrams	=	1 gram (g.)
10 grams	=	1 decagram (Dg.)
10 decagrams	=	1 hectogram (Hg.)
10 hectograms	=	1 Kilogram (Kg.)
1000 kilograms	=	1 (metric) ton (T.)

## Surveyor's Square Measure

100 square meters (m. <sup>2</sup> )	=	1 are (ar.)
100 acres	=	1 hectare (har.)
100 hectares	=	1 sq. kilometer (Km. <sup>2</sup> )

## Square Measure

100 sq. millimeters (mm. <sup>2</sup> )	=	1 sq. centimeter (cm. <sup>2</sup> )
100 sq. centimeters	=	1 sq. decimeter (dm. <sup>2</sup> )
100 sq. decimeters	=	1 sq. meter (m. <sup>2</sup> )

## Cubic Measure

1000 cu. millimeters (mm. <sup>3</sup> )	=	1 cu. centimeter (cm. <sup>3</sup> )
1000 cu. centimeters	=	1 cu. decimeter (dm. <sup>3</sup> )
1000 cu. decimeters	=	1 cu. meter (m. <sup>3</sup> )

## Dry and Liquid Measure

10 milliliters (mL)	=	1 centiliter (cl.)
10 centiliters	=	1 deciliter (dl.)
10 deciliters	=	1 liter (l.)
100 liters	=	1 hectoliter (Hl.)

1 liter = 1 cubic decimeter = the volume of 1 kilogram of pure water at a temperature of 39.2 degrees F.

## Length Conversion Constants for Metric and U.S. Units

Millimeters X.039370 = inches.  
Meters x 39.370 = inches.  
Meters X 3.2808 = feet.  
Meters X 1.09361 = yards.  
Kilometers X 3,280.8 = feet.  
Kilometers X.62137 = Statute Miles.  
Kilometers x.53959 = Nautical Miles.

Inches X 25.4001 = millimeters.  
Inches X.0254 = meters.  
Feet x.30480 = meters.  
Yards X.91440 = meters.  
Feet x.0003048 = kilometers.  
Statute Miles X 1.60935 = kilometers.  
Nautical Miles x 1.85325 = kilometers.

## Weight Conversion Constants for Metric and U.S. Units

Grams X 981 = dynes.  
Grams X 15.432 = grains.  
Grams X.03527 = ounces (Avd.).  
Grams x.033818 = fluid ounces (water).  
Kilograms X 35.27 = ounces (Avd.).  
Kilograms X 2.20462 = pounds (Avd.).  
Metric Tons (1000 Kg.) X 1.10231 = Net Ton (2000 lbs.).  
Metric Tons (1000 Kg.) X.98421 = Gross Ton (2240 lbs.).

Dynes X.0010193 = grams.  
Grains X.0648 = grams.  
Ounces (Avd.) X 28.35 = grams.  
Fluid Ounces (Water) X 29.57 = grams.  
Ounces (Avd.) X.02835 = kilograms.  
Pounds (Avd.) X.45359 = kilograms.  
Net Ton (2000 lbs.) X.90719 = Metric Tons (1000 Kg.).  
Gross Ton (2240 lbs.) X 1.01605 = Metric Tons (1000 Kg.).

## Area Conversion Constants for Metric and U.S. Units

Square Millimeters X.00155 = square inches.  
Square centimeters X.155 = square inches.  
Square Meters X 10.76387 = square feet.  
Square Meters X 1.19599 = square yards.  
Hectares X 2.47104 = acres.  
Square Kilometers X 247.104 = acres.  
Square Kilometers X.3861 = square miles.

Square Inches X 645.163 = square millimeters.  
Square Inches x 6.45163 = square centimeters.  
Square Feet x.0929 = square meters.  
Square Yards X.83613 = square meters.  
Acres X.40469 = hectares.  
Acres X.0040469 = square kilometers.  
Square Miles X 2.5899 = square kilometers.

## Volume Conversion Constants for Metric and U.S. Units

Cubic centimeters X.033818 = fluid ounces.  
Cubic centimeters X.061023 = cubic inches.  
Cubic centimeters X.271 = fluid drams.  
Liters X 61.023 = cubic inches.  
Liters X 1.05668 = quarts.  
Liters X .26417 = gallons.  
Liters X.035317 = cubic feet.  
Hectoliters X 26.417 = gallons.  
Hectoliters X 3.5317 = cubic feet.  
Hectoliters X 2.83794 = bushel (2150.42 cu. in.).  
Hectoliters X.1308 = cubic yards.  
Cubic Meters x 264.17 = gallons.  
Cubic Meters x 35.317 = cubic feet.  
Cubic Meters X 1.308 = cubic yards.

Fluid Ounces X 29.57 = cubic centimeters.  
Cubic Inches X 16.387 = cubic centimeters.  
Fluid Drams x 3.69 = cubic centimeters.  
Cubic Inches X.016387 = liters.  
Quarts x.94636 = liters.  
Gallons x 3.78543 = liters.  
Cubic Feet x 28.316 = liters.  
Gallons x.0378543 = hectoliters.  
Cubic Feet x.28316 = hectoliters.  
Bushels (2150.42 cu. in.) X.352379 = hectoliters.  
Cubic Yards x 7.645 = hectoliters.  
Gallons x.00378543 = cubic meters.  
Cubic Feet x.028316 = cubic meters.  
Cubic Yards x.7645 = cubic meters.

## Power and Heat Conversion Constants for Metric and U.S. Units

Calorie x 0.003968 = B.T.U.  
Joules X.7373 = pound-feet.  
Newton Meters X 8.851 = pound-inches  
Cheval Vapeur X.9863 = Horsepower.  
Kilowatts X 1.34 = Horsepower.  
Kilowatt Hours X 3415 = B.T.U.  
(Degrees Cent. X 1.8) + 32 = degrees Fahr.  
(Degrees Reamur X 2.25) + 32 = degrees Fahr.

B.T.U. X 252 = calories.  
Pound-Feet X 1.3563 = joules.  
Pound-inches X.11298 = Newton-meters.  
Horsepower X 1.014 = Cheval Vapeur.  
Horsepower X.746 = kilowatts.  
B.T.U. X.00029282 = kilowatt hours.  
(Degrees Fahr. - 32) x.555 = degrees Cent.  
(Degrees Fahr. - 32) x.444 = degrees Reamur.