Unit Converter Help Index

To learn how to use Help, press F1.

What is Unit Converter?

Unit Converter is a program which allows easy translation between different mearurements. A unit may be converted to any unit in the same category.

In the From box, select the unit to convert From and enter the number of units. The To box will immediately show the equivalent measurements in the unit selected to convert To.

Related Topics
Keyboard
Mouse

Unit Converter Keyboard

The following keys are used in Unit Converter:

Enter	**Perform conversion after entering a number in the From box.**
Tab, shift+Tab	**Go to the next or previous parameter.**
Shift+Insert	**Paste text into From box.**
Ctrl+Insert	**Copy text to clipboard.**
Shift+Delete	**Cut text out of From box.**
Up/Down Arrows	**In the unit selection listboxes, select the next or previous unit.**

Unit Converter Mouse Operation

1. **Use the mouse to position the cursor in the From quantity edit box.**
2. **Enter the quantity.**
3. **Select From and To conversion units by scrolling the unit listboxes and clicking the desired unit.**

Unit Converter Glossary

A-B

- Acre
- Angstrom
- Are
- Astronomical Unit
- Atmosphere
- Atomic Mass Unit
- Bar
- Barn
- Barye
- Board Foot
- BTU
- Bushel

C-D

- calorie
- Calorie
- Carat
- Celsius
- Centimeter
- Chain
- Cord
- Cubit
- Cup
- Day
- Day (sidereal)
- Degree
- Dram (apoth)
- Dram (avdp)
- Dyne

E-F

- Erg
- Fahrenhite
- Fathom
- Fluid Dram
- Fluid Ounce
- Foot
- Fortnight
- Furlong

G-H

- Gallon
- Gill
- Gradian
- Grain
- Gram
- Hand
- Hectare
- Hogshead
- Horsepower
- Hour

I-J

- Jigger
- Joule

K-L

- Kelvin
- Kilogram
- Kilometer
- Kilowatt
- League
- Light-year
- Link

Liter

M-N

Megawatt
Meter
Microgram
Micron
Microwatt
Mile (nautical)
Mile (statute)
Millibar
Milligram
Milliliter
Millimeter Hg
Millimeter
Milliwatt
Mil
Minute
Minute of Arc
Nanometer
Newton

O-P

Ounce (avdp)
Ounce (troy)
Parsec
Pascal
Peck
Pennyweight
Pica
Pint (dry)
Pint (liq)
Pound (avdp)
Pound (troy)

Q-R

Quadrant
Quart (dry)
Quart (liq)
Radian
Rankine
Reaumur
Revolution
Rod

S-T

Scruple
Second
Second of Arc
Section
Slug
Stere
Stone
Tablespoon
Teaspoon
Ton (long)
Ton (metric)
Ton (short)
Torr
Township

U-Z

Watt
Week
Yard
Year (calendar)
Year (sidereal)

Year (tropical)

Bibliography

Data and definitions for Unit Converter were extracted from two sources:

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Morris, William, editor, The American Heritage Dictionary of the English Language, New College Edition, Houghton Mifflin Company, Boston, 1978.

Category

A set of units with the same dimensions.

Angstrom

A unit of length, used especially in expressing the length of electromagnetic waves, equal to 10e-10 meters.

Astronomical Unit

A unit of length, usually defined as the distance from the earth to the sun, 149,599,000,000 meters. This value for the AU was derived from radar observations of the distance of Venus.

Centimeter

A unit of length equal to 1/100 meter.

Chain

A surveyor's measure of length, derived from a measuring instrument consisting of 100 linked peices of steel. One chain is defined as 100 links, or 66 feet.

Cubit

An ancient unit of linear measure, originally equal to the length of the forearm from the tip of the middle finger to the elbow, now commonly defined as 18 inches.

Fathom

A unit of length equal to 6 feet used principally in the measurement and specification of marine depths.

Foot

A U.S. Customary System unit of length equal to 12 inches or exactly 0.3048 meters.

Furlong

A unit of length equal to 660 feet. Originally from the length of a furrow made on a square field of 10 acres.

Hand

A unit of length equal to 4 inches, used especially to specify the height of a horse.

Inch

A U.S. Customary System unit of length exactly equal to 0.0254 meters.

Kilometer

A unit of length equal to 1000 meters.

League

A unit of length equal to 3 statute miles.

Light-year

The distance that light travels in one year through a vacuum.

Link

A unit of length used in surveying, equal to 1/100 chain or 7.92 inches.

Meter

The SI base unit of length, defined as 1,650,763.73 wavelengths in vacuum of the radiation corresponding to the transition between the levels 2p10 and 5d3 of the krypton-86 atom.

Micron

A unit of length equal to 1e-6 meter.

Mil

A unit of length equal to 1/1000 inch.

Mile (nautical)

A unit of length used in air and sea navigation based on the length of one minute of arc of a great circle. Defined to be exactly 1852 meters.

Mile (statute)

5280 feet.

Millimeter

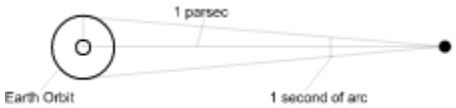
A unit of length equal to 1/1000 meter.

Nanometer

A unit of length equal to 1e-9 meter.

Parsec

A unit of length equal to the distance from the sun to a point having a heliocentric parallax of 1 second, used as a measure of stellar distance. The name parsec is derived from Parallax-Second.



Pica

A printer's unit of type size, equal to 12 points or about 1/6 inch.

Point

A printer's unit of type size, equal to 0.01384 inch.

Rod

A surveyor's measure of length equal to 5.5 yards.

Yard

The U.S. Customary Sytem base unit of length, defined as 0.9144 meter.

Acre

A U.S. Customary System unit of land area equal to 43560 square feet.

Are

An SI derived unit of area, equal to 100 square meters.

Barn

A unit of area equal to 1e-24 square centimeters, used to express nuclear cross sections.

Hectare

A unit of area equal to 100 ares.

Section

A surveyor's unit of land area, equal to 640 acres or 1 square mile.

Township

A public land surveying unit equal to 36 sections.

Board Foot

A unit of lumber measurement equal to 1 foot square by 1 inch thick.

Bushel

A unit of volume or capcity in the U.S. Customary System, used in dry measure and equal to 4 pecks or 2150.42 cubic inches.

Cord

A unit of quantity for cut fuel wood, equal to 128 cubic feet in a stack measuring 4 by 4 by 8 feet.

Cup

A unit of capacity equal to 8 fluid ounces, used especially in cooking.

Fluid Dram

A unit of capacity equal to 1/8 fluid ounce used espcially by apothecaries.

Fluid Ounce

A unit of capacity in the U.S. Customary System, defined as 1.804 cubic inches.

Gallon

A unit of capacity in the U.S. Customary System equal to 128 fluid ounces.

Gill

A unit of capacity in the U.S. Customary System, used in liquid measure, equal to 4 fluid ounces.

Hogshead

A unit of capacity in U.S. liquid measure, equal to about 63 gallons.

Jigger

A unit of volume equal to 1.5 fluid ounces, used in measuring liquor.

Liter

A unit of volume equal to 1000 cubic centimeters.

Milliliter

A unit of volume equal to 1 cubic centimeter.

Peck

A unit of dry measure equal to 8 dry quarts.

Pint (dry)

A unit of dry measure equal to about 33.6 cubic inches.

Pint (liq)

A unit of liquid measure equal to 16 fluid ounces.

Quart (dry)

A unit of dry measure equal to about 67.2 cubic inches.

Quart (liq)

A unit of liquid measure equal to 32 fluid ounces.

Stere

The SI unit of volume, equal to 1 cubic meter.

Tablespoon

A unit of capacity equal to 1/2 fluid ounce, used mainly in cooking.

Teaspoon

A unit of capacity equal to 1/6 fluid ounce, used mainly in cooking.

Atomic Mass Unit

A unit of mass defined as 1/12 of the mass of one atom of Carbon-12.

Carat

A unit of weight equal to 0.2 grams, used for measuring precious stones.

Dram (apoth)

A unit of apothecary weight, equal to 60 grains.

Dram (avdp)

A unit of weight in the U.S. Customary System, equal to 1/16 ounce.

Dyne

The force required to accelerate a 1 gram mass by 1 centimeter/second/second.

Grain

A unit of weight equal to 1/7000 pound or 1/5760 Troy pound.

Gram

A unit of mass equal to 1/1000 kilogram.

Kilogram

The SI base unit of mass. One kilogram is defined as the mass of the cylinder of platinum-iridium alloy called the International Prototype Kilogram, which is preserved in a vault at Sevres, France, by the International Bureau of Weights and Measures.

Microgram

A unit of mass equal to 1e-6 gram.

Milligram

A unit of mass equal to 1/1000 gram.

Newton

The force required to accelerate a 1 kilogram mass by 1 meter/second/second.

Ounce (avdp)

A unit of weight in the U.S. Customary System, equal to 1/16 pound or 437.5 grains.

Ounce (troy)

A unit of apothecary weight equal to 480 grains.

Pennyweight

A unit of apothecary weight equal to 24 grains.

Pound (avdp)

The U.S. Customary System fundamental unit of weight, now defined to be exactly 0.45359237 kilograms.

Pound (troy)

A unit of weight equal to 5760 grains.

Scruple

A unit of weight equal to 20 grains used mainly by apothecaries.

Slug

(Also called G-pound) The mass of an object that is accelerated at a rate of one foot per second per second when acted upon by a force of one pound weight.

Stone

A British unit of weight equal to 14 pounds.

Ton (short)

A unit of weight in the U.S. Customary System, equal to 2000 pounds.

Ton (long)

A unit of weight in the U.S. Customary System, equal to 2240 pounds.

Ton (metric)

A unit of mass equal to 1000 kilograms.

Day (sidereal)

The duration of one rotation of the earth on its axis, with respect to the vernal equinox. It is measured by transits of the vernal equinox over the upper branch of a meridian. Because of the precession of equinoxes, the sidereal day is about 0.01 seconds less than the period of the earth's rotation with respect to the stars.

Day

Also called Mean Solar Day. The period of one rotation of the earth with respect to the sun. Now defined as exactly 86400 seconds.

Fortnight

A period of time equal to 14 days.

Hour

A period of time equal to 60 minutes.

Minute

A period of time equal to 60 seconds.

Second

The SI unit of time. One second is the duration of 9,192,631,770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the atom of cesium 133. This value was chosen to render impossible, by any existing experimental means, the differentiation of the new second from the "ephemeris second", based on the earth's motion.

Week

A period of time equal to 7 days.

Year (sidereal)

The period of one apparent revolution of the earth around the sun, with respect to the stars, averaging 365 days, 6 hours, 9 minutes, 9.55 sec, and increasing at the rate of 0.000095 sec per year. Because of the precession of equinoxes, a sidereal year is about 20 seconds longer than a Tropical Year.

Year (tropical)

The time interval between two successive vernal equinoxes.

Year (calendar)

The period of time measured by the Gregorian calendar in which the earth completes approximately one revolution around the sun. The calendar year is defined as 365 days, 5 hours, 49 minutes, and 12 seconds of mean solar time.

BTU

(British Thermal Unit) The quantity of heat required to raise the temperature of one pound of water from 39.1 Fahrenhite to 40.1 Fahrenhite.

calorie

(Also called gram-calorie) The quantity of heat required to raise the temperature of one gram of water from 15 Celsius to 16 Celsius.

Calorie

(Also called kilogram-calorie) The quantity of heat required to raise the temperature of one kilogram of water from 15 Celsius to 16 Celsius. Sometimes used to measure the energy content of foods.

Erg

The unit of work in the cgs system of units, defined as the work performed by a force of 1 dyne acting through a distance of 1 cemtimeter.

Horsepower

A measure of power, defined as 550 foot-pounds/second.

Joule

The unit of energy or work in the MKS system of units, defined as the work performed by a force of 1 Newton acting through a distance of 1 meter.

Kilowatt

A unit of power equal to 1000 watts.

Megawatt

A unit of power equal to 1 million watts.

Microwatt

A unit of power equal to 1e-6 watt.

Milliwatt

A unit ot power equal to 1/1000 watt.

Watt

That power which gives rise to the production of energy at the rate of 1 joule per second.

Atmosphere

A unit of pressure approximately equal to the mean barometric pressure on earth at sea level. Defined as 101,325 Newtons per square meter.

Bar

An international unit of pressure equal to 1 million dynes per square centimeter, a pressure slightly less than 1 atmosphere.

Barye

The pressure unit of the cgs system, defined as 1 dyne per square centimeter.

Inch Hg

A quantity of pressure which will support a column of liquid mercury at a level of 1 inch in a closed tube.

Millibar

A unit of pressure equal to 1/1000 bar.

Millimeter Hg

A quantity of pressure which will support a column of liquid mercury at a level of 1 millimeter in a closed tube. This unit has largely been replaced by the Torr.

Pascal

The SI unit of pressure, equal to 1 newton per square meter.

Torr

International standard unit of pressure intended to replace the millimeter of mercury, defined as 1/760 standard atmosphere.

Degree

An angular measure equal to 1/360 revolution.

Gradian

An angular measure equal to 1/400 revolution.

Minute

An angular measure equal to 1/60 degree.

Quadrant

An angular measure equal to 1/4 revolution.

Radian

The SI supplementary unit of plane angle, defined as the angle subtended at the center of a circle by an arc equal in length to a radius of the circle.

Revolution

One complete circle of arc. Equal to 2 pi radians.

Second

An angular measure equal to 1/3600 degree.

Celsius

A temperature scale defined such that the freezing point of water is 0 degrees and the boiling point of water is 100 degrees.

Fahrenhite

A temperature scale defined such that the freezing point of water is 32 degrees and the boiling point of water is 212 degrees.

Kelvin

The SI Base Unit of temperature. Defined to be 1/273.16 of the temperature of the triple point of water. Commonly accepted to be a temperature scale defined with units equal in size to the Celsius scale, but shifted such that 0 degrees is absolute zero.

Rankine

A temperature scale defined with units equal in size to the Fahrenhite scale, but shifted such that 0 degrees is absolute zero.

Sq centimeter

A unit of area one centimeter square.

Sq chain

A unit of area one chain square.

Sq foot

A unit of area one foot square.

Sq inch

A unit of area one inch square.

Sq kilometer

A unit of area one kilometer square.

Sq link

A unit of area one link square.

Sq meter

A unit of area one meter square.

Sq mil

A unit of area one mil square.

Sq mile (nautical)

A unit of area one nautical mile square.

Sq mile (statute)

A unit of area one mile square.

Sq millimeter

A unit of area one millimeter square.

Sq rod

A unit of area one rod square.

Sq yard

A unit of area one yard square.

Cubic centimeter

A unit of volume one centimeter cubed.

Cubic foot

A unit of volume one foot cubed.

Cubic inch

A unit of volume one inch cubed.

Cubic millimeter

A unit of volume one millimeter cubed.

Cubic yard

A unit of volume one yard cubed.

Foot-pound

The amount of work expended by a force of one pound acting through a distance of one foot.

Horsepower-hour

The amount of energy produced by a power of one horsepower acting for one hour.

Kilogram-meter

The amount of work expended by a force of one kilogram acting through a distance of one meter.

Kilowatt-hour

The amount of energy produced by a power of one kilowatt acting for one hour.

Newton-meter

The amount of work expended by a force of one newton acting through a distance of one meter.

Watt-hour

The amount of energy produced by a power of one watt acting for one hour.

Watt-second

The amount of energy produced by a power of one watt acting for one second.

BTU/hour

The amount of power needed to produce an energy of one BTU in one hour.

BTU/min

The amount of power needed to produce an energy of one BTU in one minute.

BTU/sec

The amount of power needed to produce an energy of one BTU in one second.

calorie/sec

The amount of power needed to produce an energy of one calorie in one second.

Calorie/sec

The amount of power needed to produce an energy of one Calorie in one second.

Dyne-cm/sec

The amount of power needed to produce a force of one dyne through a distance of one centimeter in one second.

Erg/sec

The amount of power needed to produce an energy of one erg in one second.

Foot-pound/sec

The amount of power needed to produce a force of one pound through a distance of one foot in one second.

Gram-cm/sec

The amount of power needed to produce a force of one gram through a distance of one centimeter in one second.

Joule/sec

The amount of power needed to produce an energy of one joule in one second.

kg-meter/sec

The amount of power needed to produce a force of one kilogram through a distance of one meter in one second.

Dyne/sq cm

The pressure exerted by a force of one dyne over an area of one square centimeter.

Gram/sq cm

The pressure exerted by a force of one gram over an area of one square centimeter.

kg/sq meter

The pressure exerted by a force of one kilogram over an area of one square meter.

Newton/sq meter

The pressure exerted by a force of one newton over an area of one square meter.

Pound/sq in

The pressure exerted by a force of one pound over an area of one square inch.

Reaumur

A temperature scale defined such that the freezing point of water is 0 degrees and the boiling point of water is 80 degrees. After René Antoine Ferchault de Reaumur (1683-1757), a French physicist.

Absolute Zero

The theoretical temperature at which molecular motion ceases and a body would have zero heat energy. This is also the temperature at which the volume of an ideal gas is zero and the temperature of the cold source which would render the Carnot heat engine cycle 100% efficient.

SI

(International System of Units) An internationally accepted system of units adopted by the Conférence Générale des Poids et Mesures. The SI Base Units are the meter, kilogram, second, ampere, kelvin, candela, and mole. The SI system is now in common use in scientific and technological applications worldwide.

The SI system orginated from the Metric System first proposed by Gabriel Mouton, Vicar of Lyons, in 1670, and adopted in France in 1795.

cgs System

A system of units derived from the centimeter, gram, and second.

U.S. Customary System

A system of units derived from the fundamental units yard and pound. These units are now defined in terms of the SI units meter and kilogram. The U.S. Customary System originated from the British Imperial System.