

SI Unit Quantity Names

<u>Quantity:</u>	<u>SI Unit Name</u>
length:	meter
mass:	kilogram
time:	second
electric current:	ampere
thermodynamic temperature:	kelvin
amount of substance:	mole
luminous intensity:	candela
area:	square meter
volume:	cubic meter
speed, velocity:	meter per second
acceleration:	meter per second squared
wave number:	1 per meter
density, mass density:	kilogram per cubic meter
specific volume:	cubic meter per kilogram
current density:	ampere per square meter
magnetic field strength:	ampere per meter
concentration (of amount of substance):	mole per cubic meter
luminance:	candela per square meter
frequency:	hertz
force:	newton
pressure, stress:	pascal
energy, work, quantity of heat:	joule
power, radiant flux:	watt
electric charge, quantity of electricity:	coulomb
electric potential, potential difference, electromotive force:	volt
capacitance:	farad
electric resistance:	ohm
electric conductance:	siemens
magnetic flux:	weber
magnetic flux density:	tesla
inductance:	henry
Celsius temperature:	degree Celsius
luminous flux:	lumen
illuminance:	lux
activity (of a radionuclide):	becquerel
absorbed dose, specific energy imparted, kerma, absorbed dose index:	gray
dose equivalent, dose equivalent index:	sievert

SI Prefixes

1,000,000,000,000,000,000 (10 ¹⁸):	exa
1,000,000,000,000,000 (10 ¹⁵):	peta
1,000,000,000,000 (10 ¹²):	tera
1,000,000,000 (10 ⁹):	giga
1,000,000 (10 ⁶):	mega
1,000 (10 ³):	kilo
100 (10 ²):	hecto
10 (10 ¹):	deka
.1 (10 ⁻¹):	deci
.01 (10 ⁻²):	centi
.001 (10 ⁻³):	milli
.000 001 (10 ⁻⁶):	micro
.000 000 001 (10 ⁻⁹):	nano
.000 000 000 001 (10 ⁻¹²):	pico
.000 000 000 000 001 (10 ⁻¹⁵):	femto
.000 000 000 000 000 001 (10 ⁻¹⁸):	atto

MISCELLANEOUS UNITS OF MEASURE

ACRE: 4840 square yards, 43,560 square feet.

HAND: equals 4 inches (used to specify the height of a horse).

PALM: equals 3 or 4 inches.

SPAN: unit of length equal to 9 inches.

CUBIT: about 18 inches.

GROSS: 12 dozen or 144.

GREAT GROSS: 12 gross or 1728.

SCORE: a group of 20 items.

KNOT: speed of one nautical mile per hour (measures the speed of ships).

LEAGUE: a unit of distance equal to about 3 statute miles.

ASTRONOMICAL UNIT (A.U.): 93,000,000 miles, approximately the distance of the earth from the sun.

LIGHT-YEAR: 5,878,000,000,000 miles, which is the distance light travels in a vacuum for a period of one year (it travels at the rate of 186,281 miles per second).

PARSEC: a unit for measuring interstellar distances, equal to 3.26 light years.

CHAIN: a surveyor's measuring instrument consisting of 100 links, equal to 66 feet.

FORTNIGHT: a period of 14 days.

POINT: unit of type equal to approximately 1/72 inch.

PICA: 12-point type or a unit of 1/6 inch (used in printing).

AGATE: approximately 5½ point (a size of type), equal to 1/14 inch.

BALE: a large bundle of goods.

LOAD: equals 1 cubic yard (used for earth or gravel).

BOARD FOOT (fbm): a unit of quantity for lumber, equal to 144 cubic inches (12" x 12" x 1").

SQUARE: an area of 100 square feet (used to measure floor or roofing material).

CORD: a unit of wood cut for fuel equal to 128 cubic feet in a stack (4 x 4 x 8 ft.)

NAIL: equals 2.25 inches (used to measure cloth).

ELL: equals 45 inches (used to measure cloth).

BOLT: a large roll of cloth, wallpaper, a block of timber to be cut. In cloth it equals 120 feet.

SKEIN: equals 360 feet (used to measure yarn).

CATTY: weighs about 200 milligrams (used to measure tea and other materials).

MAGNUM: wine bottle holding two-fifths of a gallon.

PIN: equals 4½ gallons (used to measure liquids).

FIRKIN: equals about 9 imperial gallons or about 56 pounds (used to measure lard or butter).

TIERCE: equals 42 gallons (used to measure liquids).

PUNCHEON: equals 84 gallons (used to measure liquids).

PIPE: a wine cask with a capacity of 126 gallons.

HOGSHEAD (hhd): large cask or barrel with a capacity ranging from 63 to 140 gallons.

TUN: a large cask for liquids, especially wine, equal to 252 gallons.

HORSEPOWER: unit of power equal to 33,000 foot-pounds per minute.

QUIRE: 24-25 sheets of the same size paper equal to 1/20 of a ream.

REAM: usually 500 sheets of paper.

CARAT: equals 200 milligrams (used in weighing precious stones).

QUARTER: equals 25 pounds (used to measure grain).

QUINTAL: 100 kilograms or 100,000 grams (a hundredweight).

STONE: British weight of 14 pounds avoirdupois (goods sold by weight).

AREAS OR SURFACES

1 acre: 43,560 square feet
4,840 square yards
0.405 hectare

1 are: 119.599 square yards
0.025 acre

1 hectare: 2.471 acres

1 square centimeter: 0.155 square inch

1 square decimeter: 15.5 square inches

1 square foot: 929.030 square centimeters

1 square inch: 6.4516 square centimeters

1 square kilometer: 0.386 square mile

247.105 acres

1 square meter: 1.196 square yards

10.764 square feet

1 square mile: 258.999 hectares

1 square millimeter: 0.002 square inch

1 square rod, square pole, or square perch: 25.293 square meters

1 square yard: 0.836 square meters

LINEAR MEASURE

U.S. CUSTOMARY

12 inches = 1 foot = 0.304 8 meter

3 feet = 1 yard = 0.914 4 meter

5,280 feet = 1 statute mile = 1.609 kilometers

6,076.115 feet = 1 International Nautical Mile = 1.852 kilometers

METRIC

10 millimeters = 1 centimeter

10 centimeters = 1 decimeter

10 decimeters = 1 meter

10 meters = 1 dekameter

10 dekameters = 1 hectometer

10 hectometers = 1 kilometer

AREA MEASURE

U.S. CUSTOMARY

144 square inches = 1 square foot = 0.092 9 square meter

9 square feet = 1 square yard = 0.836 1 square meter

43,560 square feet = 1 acre = 0.404 7 hectare

640 acres = 1 square mile = 259 hectares

1 square mile = 1 section = 259 hectares

36 sections = 1 township = 932 4 hectares

METRIC

100 square millimeters = 1 square centimeter

10,000 square centimeters = 1 square meter

100 square meters = 1 are

100 ares = 1 hectare

100 hectares = 1 square kilometer

WEIGHT

U.S. CUSTOMARY (Avoirdupois)

437.5 grains = 1 ounce = 28.349 5 grams

7,000 grains = 1 pound = 0.453 592 37 kilogram

16 ounces = 1 pound = 0.453 592 37 kilogram

2,000 pounds = 1 short ton = 0.907 2 metric ton

2,240 pounds = 1 long ton = 1.016 metric tons

METRIC

10 milligrams = 1 centigram

10 centigrams = 1 decigram

10 decigrams = 1 gram

10 grams = 1 dekagram

10 dekagrams = 1 hectogram

10 hectograms = 1 kilogram

1,000 kilograms = 1 metric ton

CAPACITY, OR VOLUME, LIQUID MEASURE

U.S. CUSTOMARY

1 gallon = 231 cubic inches = 3.785 4 liters

4 fluid ounces = 1 gill = 0.118 3 liter

4 gills = 1 pint = 0.473 2 liter

2 pints = 1 quart = 0.946 4 liter

4 quarts = 1 gallon = 3.785 4 liters

METRIC

10 milliliters = 1 centiliter

10 centiliters = 1 deciliter

10 deciliters = 1 liter

100 liters = 1 dekaliter

10 dekaliters = 1 hectoliter

10 hectoliters = 1 kiloliter

CAPACITY, OR VOLUME, DRY MEASURE

U.S. CUSTOMARY

1 bushel = 2.150.42 cubic inches = 35.239 1 liters

2 dry pints = 1 dry quart = 1.101 2 liters

8 dry quarts = 1 peck = 8.809 8 liters

4 pecks = 1 bushel = 35.2391 liters

METRIC

1,000 cubic millimeters = 1 cubic centimeter

1,000 cubic centimeters = 1 cubic decimeter

1,000 cubic decimeters = 1 cubic meter

TROY WEIGHT

24 grains = 1 pennyweight = 1.55517 grams
 20 pennyweights = 1 ounce troy = 31.0103 47 grams
 12 ounces troy = 1 pound troy = 0.373 242 kilogram

GUNTER'S OR SURVEYOR'S CHAIN MEASURE

7.92 in. = 1 link(li.) = 20.12 cm
 66 ft. = 1 chain (ch.) = 100 li. = 20.12 m
 660 ft. = 1 furlong (fur.) = 10 ch. = 201.168 m
 5,280 ft. = 1 statute mile (mi.) = 8 fur. = 1.6093 km

ENGINEER'S CHAIN

1 ft. = 1 link (li.) = 30.48 cm
 100 ft. = 1 chain (ch.) = 100 li. = 30.48 m
 5280 ft. = 1 mile (mi.) = 52.8 ch. = 1.6093 km

CAPACITIES OR VOLUMES

1 barrel (liquid):	31 to 42 gallons
1 barrel (standard) for fruits, vegetables, and: other dry commodities except dry cranberries	7,056 cubic inches 105 dry quarts
1 barrel (standard)cranberry:	3.281 bushels, struck measure 5.286 cubic inches 86 45/64 dry quarts 2,709 bushels, struck measure
1 bushel(U.S.)struck measure:	2,150.42 cubic inches; 35.238 liters
1 bushel, heaped (US):	2,747.715 cubic inches 1.278 bushels, struck measure
1 cubic centimeter:	0.061 cubic inches
1 cubic decimeter:	61.024 cubic inches
1 cubic inch:	0.554 fluid ounce 4.433 fluid drams 16.387 cubic centimeters
1 cubic foot:	7.481 gallons; 28.316 cubic decimeters
1 cubic meter:	1.308 cubic yards
1 cubic yard:	0.765 cubic meter
1 cup, measuring:	8 fluid ounces; ½ liquid pint
1 dram, fluid or liquid (U.S.):	1/8 fluid ounces 0.226 cubic inch 3.697 milliliters 1.041 British fluid drachms
1 dekaliter:	2.642 gallons; 1.135 pecks
1 gallon(U.S.):	231 cubic inches 3.785 liters 0.833 British gallon 128 U.S. fluid ounces
1 gallon (British Imperial):	277.42 cubic inches 1.201 U.S. gallons 4.546 liters 160 British fluid ounces
1 gill:	7.219 cubic inches; 4 fluid ounces; 0.118 liter
1 hectoliter:	26.418 gallons
1 liter:	1.057 liquid quarts 0.908 dry quart 61.024 cubic inches
1 milliliter:	0.271 fluid drams; 16.231 minims; 0.061 cubic inch
1 ounce, liquid (U.S.):	1.805 cubic inch 29.574 milliliters 1.041 British fluid ounces
1 peck:	8.810 liters
1 pint, dry:	33.600 cubic inches; 0.551 liter
1 pint, liquid:	28.875 cubic inches; 0.473 liter
1 quart, dry (U.S.):	67.201 cubic inches; 1.101 liters; 0.969 British quart
1 quart, liquid (U.S.):	57.75 cubic inches; 0.946 liter; 0.833 British quart
1 quart (British):	69.354 cubic inches 1.032 U.S. dry quarts 1.201 U.S. liquid quarts
1 tablespoon:	3teaspoons; 4 fluid drams; ½ fluid ounce
1 teaspoon:	1/3 tablespoon; 1 1/3 fluid drams

WEIGHTS OR MASSES

1 assay ton:	29.167 grams
1 carat:	200 milligrams
	3.086 grains
1) dram, apothecaries:	60 grains
	3.888 grams
1 dram, avoirdupois:	27 $\frac{11}{32}$ (= 27.344) grains
	1.772 grams
1 grain:	64.798 91 milligrams
1 gram:	15.432 grains
	0.035 ounce, avoirdupois
1 hundredweight, gross or long:	112 pounds
	50.802 kilograms
1 hundredweight, net or short:	100 pounds
	45.359 kilograms
1 kilogram:	2.205 pounds
1 microgram [μg (the Greek letter mu in combination with the letter g)]	0.000 001 gram
1 milligram:	0.015 grain
1 ounce, avoirdupois:	4375 grains
	0.911 troy or apothecaries ounce
	(troy = weight based upon a 12-ounce pound and the ounce of 20 pennyweights or 480 grains)
	28350 grams
1 ounce, troy:	480 grains
	1.097 avoirdupois ounces
	31.103 grams
1 pennyweight:	1.555 grams
1 pound, avoirdupois:	7.000 grams
	1.215 troy or apothecaries pound
	453.592 37 grams
1 pound, troy:	5.760 grains
	0.823 avoirdupois pound
	373.242 grams
1 ton, gross or long:	2,240 pounds
	1.12 net tons
	1.016 metric tons
1 ton, metric:	2,204.623 pounds
	0.984 gross tons
	1.102 net tons
1 ton, net or short:	2,000 pounds
	0.893 gross ton
	0.907 metric tons

METRIC AND U.S. EQUIVALENTS

1 angstrom (A) (light-wave measurement):	0.1 millimicron 0.000 1 micron 0.000 000 1 millimeter 0.000 000 004 inch
1 cable's length:	120 fathoms 720 feet 219.456 meters
1 centimeter:	0.3937 inch
1 chain (Gunter's or surveyor's):	66 feet 20.1168 meters
1 chain (engineers):	100 feet 30.48 meters
1 decimeter:	3.937 inches
1 dekameter:	32.808 feet
1 fathom:	6 feet 1.8288 meters
1 foot:	0.3048 meter
1 furlong:	10 chains (surveyor's) 660 feet 220 yards 1/8 statute mile 201.168 meters
1 inch:	2.54 centimeters
1 kilometer:	0.621 mile 3,281.5 feet
1 league(land):	3 statute miles 4.828 kilometers
1 link (Gunter's or surveyor's):	7.92 inches 0.201 168 meter
1 link (engineers):	1 foot 0.305 meter
1 meter:	39.37 inches 1.094 yards
1 micron (u):	0.0001 millimeter 0.000 039 37 inch
1 mill:	0.001 inch 0.025 4 millimeter
1 mile (statute or land):	5,280 feet 1,609 kilometers
1 international nautical mile:	1.852 kilometers 1.151 statute miles 0.999 U.S. nautical miles
1 millimeter:	0.03937 inch
1 nanometer:	0.001 micrometer or 0.000 000 039 37 inch
1 point (typography):	0.013 837 inch 1/72 inch (approximately) 0.351 millimeter
1 rod, pole, or perch:	16½ feet 5.0292 meters
1 yard:	0.9144 meter