

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
A				
acres	x	0.404 69	=	hectares
acres	x	43,560	=	square feet (ft ²)
acres	x	4,046.873	=	square meters (m ²)
acre-feet	x	43,560	=	cubic feet (ft ³ or cf)
acre-feet	x	7,758	=	barrels
angstrom units	x	1.0E-10	=	meters (m)
atmospheres	x	14.70	=	pounds/square inch
atmospheres	x	1.033	=	kilograms/square centimeter
atmospheres	x	1.013250E+05	=	pascal
atmospheres	x	33.90	=	Feet of water
atmospheres	x	76.0	=	centimeter of mercury

B Return to top of page				
Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
barrels (crude oil)	x	5.6146	=	cubic feet of crude oil
barrels (crude oil)	x	0.158 987 3	=	cubic meters of crude oil
barrels (crude oil)	x	42	=	gallons of crude oil, US
barrels (crude oil)	x	158.987 3	=	liters of crude oil
barrels (crude oil)	x	0.136	=	metric tons of crude oil
barrels/day	x	0.0292	=	Gallons(US)/minute
barrels/day<>	x	1.84	=	cubic centimeters/second
barrels (crude oil)	x	0.15	=	short tons of crude oil
barrels, US liquid	x	0.75	=	barrels of crude oil
barrels, US liquid	x	31.5	=	gallons, US
bars	x	0.98	=	atmospheres
bars	x	14.50	=	pounds/square inch
British thermal units (Btu)	x	3.931E-04	=	horsepower-hours
British thermal units (Btu)	x	0.000 292 8	=	kilowatthours (kWh)
bushels, US	x	0.035 239 07	=	cubic meters (m ³)

[C Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
calories (cal)	x	4.186 8	=	joules (J)
centimeters (cm)	x	0.394	=	inches (in)
centimeters of mercury	x	0.44	=	feet of water
centimeters/second	x	0.036	=	kilometers/hour
centipoise	x	0.01	=	poise
centipoise	x	0.01	=	grams/cm-sec
centipoise	x	0.0010	=	pascal-second
centipoise	x	6.72E-04	=	pounds/ft-sec
cubic centimeters (cm ³)	x	3.531E-05	=	cubic feet (ft ³ or cf)
cubic centimeters (cm ³)	x	0.06102	=	cubic inches (in ³)
cubic centimeters (cm ³)	x	2.642E-04	=	gallons, US liquid
cubic centimeters (cm ³)	x	1.0E-03	=	liters (L)
cubic feet (ft ³ or cf)	x	28,320	=	cubic centimeters (cm ³)
cubic feet (ft ³ or cf)	x	1728	=	cubic inches (in ³)
cubic feet (ft ³ or cf)	x	7.48	=	gallons, US liquid
cubic feet (ft ³ or cf)	x	28.316 8	=	liters (L)
cubic feet (ft ³ or cf)	x	2.831685E-02	=	cubic meters
cubic feet/minute	x	472	=	cubic centimeters/second
cubic feet/minute	x	4.72E-4	=	cubic meters/second
cubic feet/minute	x	0.12	=	gallons/second
cubic feet/minute	x	0.471 947 4	=	liters/second
cubic inches (in ³)	x	16.38706	=	cubic centimeters (cm ³)
cubic inches (in ³)	x	1.639E-05	=	cubic meters (m ³)
cubic inches (in ³)	x	4.329E-03	=	gallons (gal)
cubic inches (in ³)	x	0.016387 06	=	liters (L)
cubic meters (m ³)	x	35.315	=	cubic feet (ft ³ or cf)
cubic meters (m ³)	x	264.20	=	gallons, US liquid
cubic meters (m ³)	x	1,000	=	liters (L)
cubic meters/sec (m ^{3/s})	x	15,850	=	gallons/minute
cubic meters/sec (m ^{3/s})	x	2118	=	cubic feet/minute
cubic meters/sec (m ^{3/s})	x	60,000	=	liters/minute
cycles/second	x	1.0	=	hertz

D [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
darcy	x	0.9869E-12	=	meter squared
days (mean solar)	x	86,400	=	seconds
degrees (angle)	x	0.0111	=	quadrants
degrees (angle)	x	0.017 453 29	=	radians
degrees (angle)	x	3,600	=	seconds
degrees/second	x	0.16667	=	revolutions/minute
dynes	x	1.0E-05	=	joules/meter (newtons)
dynes/square centimeter	x	1.0E-06	=	bars

E [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
em (pica)	x	0.42	=	centimeters (cm)
ergs	x	1.0E-07	=	joules (J)
ergs	x	2.78E-14	=	kilowatthours (kWh)
ergs/second	x	1.3E-10	=	horsepower (hp)
ergs/second	x	1.0E-10	=	kilowatts

F [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
feet (ft)	x	30.48	=	centimeters (cm)
feet (ft)	x	12	=	inches (in)
feet (ft)	x	0.3048	=	meters (m)
feet (ft)	x	1.645E-04	=	miles (nautical)
feet (ft)	x	1.894E-04	=	miles (statute)
feet of water	x	0.029499	=	atmospheres of water
feet of water	x	0.8826	=	inches of mercury
feet of water	x	0.433515	=	pounds/square inch

feet/minute	x	0.5080	=	centimeter/second
feet/second	x	1.09728	=	kilometers/hour
feet/second	x	0.59248	=	knots
feet/second	x	0.681818	=	miles/hour
foot-candles	x	10.763 91	=	lumens/square meter
foot-pounds	x	3.77E-07	=	kilowatthours (kWh)
foot-pounds/minute	x	2.26E-05	=	kilowatts (kW)
foot-pounds/sec	x	0.00181	=	horsepower

G [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
gallons, US (gal)	x	0.031 75	=	barrels
gallons, US (gal)	x	0.02381	=	barrels of crude oil
gallons, US (gal)	x	3,785.41	=	cubic centimeters (cm ³)
gallons, US (gal)	x	0.1337	=	cubic feet (ft ³ or cf)
gallons, US (gal)	x	3.785412E-03	=	cubic meters (m ³)
gallons, US (gal)	x	0.832675	=	gallons, imperial
gallons, US (gal)	x	3.785412	=	liters (L)
gallons, liquid British imperial	x	1.2014	=	gallons, US liquid
gallons of crude oil	x	0.02380952	=	barrels of crude oil
gallons/minute, US	x	8.0208	=	cubic feet/hour
gallons/minute, US	x	0.134	=	cubic feet/minute
gallons/minute, US	x	6.309E-05	=	cubic meters/sec
gausses	x	1.0E-04	=	webers/square meter
grains	x	0.064798 91	=	grams (g)
grams (g)	x	0.0353	=	ounces
grams (g)	x	2.204623E-03	=	pounds (lb)
grams/centimeter	x	5.6E-03	=	pounds/inch
grams/cubic centimeter	x	62.43	=	pounds/cubic foot
grams/cubic centimeter	x	8.347	=	pounds/gallon
grams/liter	x	1,000	=	parts/million
grams/liter	x	8.34	=	pounds/1,000 gallons

grams/liter	x	0.06243	=	pounds/cubic foot
grams/square centimeter	x	2.04816	=	pounds/square foot
gram-calories	x	1.56E-06	=	horsepower-hours
gram-calories	x	1.16E-06	=	kilowatthours (kWh)

H [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
hectares (ha)	x	2.471	=	acres
hectares (ha)	x	107,600	=	square feet (ft ²)
hectares (ha)	x	10,000	=	square meters (m ²)
horsepower (hp)	x	1.014	=	horsepower (metric)
horsepower (hp)	x	42.44	=	British thermal units/minute
horsepower (hp)	x	550	=	foot-pounds/second
horsepower-hour (hp-hr)	x	2.684520E+6	=	Joules
horsepower (hp)	x	0.746043	=	kilowatts
horsepower (metric)	x	0.986	=	horsepower
horsepower (metric)	x	542.5	=	foot-pounds/second

I [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
inches (in)	x	2.54	=	centimeters (cm)
inches (in)	x	0.0254	=	meters (m)
inches (in)	x	1.578E-05	=	miles (mi)
inches of mercury	x	0.4912	=	pounds/square inch
inches of water at (4°C)	x	2.458E-03	=	atmospheres
inches of water at (4°C)	x	0.03	=	pounds/square inch

J [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
----------------------	----------------------	--------------------------	---------------	-------------------

joules (J)	x	9.48E-04	=	British thermal units (Btu)
joules (J)	x	2.778E-04	=	watthours (Wh)

K [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
kilograms (kg)	x	2.204 6	=	pounds (lb)
kilograms (kg)	x	9.84E-04	=	tons, long
kilograms (kg)	x	1.1E-03	=	tons, metric (t)
kilograms/cubic meter	x	1.42E-03	=	pounds/square inch
kilograms/meter	x	0.67197	=	pounds/foot
kilograms/square centimeter	x	0.9678	=	atmospheres
kilograms/square centimeter	x	14.223	=	pounds/square inch
kilograms/square meter	x	9.81E-05	=	bars
kilogram-meters	x	2.72E-06	=	kilowatthours (kWh)
kilometers (km)	x	3,280.84	=	feet (ft)
kilometers (km)	x	0.621 4	=	miles (mi)
kilometers/hour	x	0.91134	=	feet/second
kilometers/hour	x	0.53995	=	knots
kilometers/hour	x	0.62137	=	miles/hour
kilowatts (kW)	x	1.341	=	horsepower (hp)
kilowatts (kW)	x	1,000	=	watts (W)
kilowatthours (kWh)	x	3,413	=	British thermal units (Btu)
kilowatthours (kWh)	x	3.60E+06	=	Joules

L [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
liters (L)	x	0.0063	=	barrels of oil
liters (L)	x	0.0084	=	barrels
liters (L)	x	0.035315	=	cubic feet (ft ³ or cf)
liters (L)	x	61.02	=	cubic inches (in ³)
liters (L)	x	0.264	=	gallons

long tons	x	1,016.047	=	kilograms (kg)
long tons	x	1.016047	=	metric tons (t)
long tons	x	2,240	=	pounds (lb)
long tons	x	1.12	=	short tons (st)

M [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
meters (m)	x	3.281	=	feet (ft)
meters (m)	x	6.21E-04	=	miles (statute)
meters/second	x	2.23	=	miles/hour
meters/second	x	196.8	=	feet/minute
metric tons (t)	x	1,000	=	kilograms (kg)
metric tons (t)	x	2,204.62	=	pounds (lb)
metric tons (t)	x	1.1023	=	short tons (st)
metric tons of crude oil	x	7.33	=	barrels (bbl)
microns	x	1.0E-06	=	meters (m)
miles, statute	x	161,000	=	centimeters (cm)
miles, statute	x	5,280	=	feet (ft)
miles, statute	x	1.609344	=	kilometers (km)
miles, statute	x	1,609	=	meters (m)
miles, statute	x	0.868975	=	miles, nautical
miles/hour	x	44.70	=	centimeter/second
miles/hour	x	1.4667	=	feet/second
meters (m)	x	3.281	=	feet
meters (m)	x	6.21E-04	=	miles (statute)
millimeters	x	0.03937	=	inches
milligrams/liter	x	1	=	parts/million
million gallons/day	x	1.5472	=	cubic feet/second
minutes (angles)	x	0.0167	=	degrees

N [Return to top of page](#)

Original Unit	Multiplied	Conversion	Equals	Final Unit
---------------	------------	------------	--------	------------

	By	Factor		
newtons	x	0.22481	=	pounds force
newtons	x	100,000	=	dynes

O [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
ounces (oz)	x	28.34	=	grams (g)
ounces (oz)	x	0.0625	=	pounds (lb)

P [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
pascal	x	1	=	newton/sq meter
pascal	x	9.871E-06	=	atmosphere
parts/million	x	8.34	=	pounds/million gallon (gal)
pints, US liquid	x	0.125	=	gallons, US (gal)
poise (P)	x	1	=	grams/centimeter second
poundals	x	13,826	=	dynes
pounds (lb)	x	4.45E+05	=	dynes
pounds (lb)	x	453.59	=	grams (g)
pounds (lb)	x	4.5359E-04	=	Tons (metric)
pounds (lb)	x	4.448	=	joules/meter (newtons)
pounds (lb)	x	0.45359237	=	kilograms (kg)
pounds (lb)	x	16	=	ounces (oz)
pounds of water	x	27.68	=	cubic inches (in ³)
pounds of water	x	0.11983	=	gallons (gal)
pounds/cubic foot	x	0.1337	=	pounds/gallon (US)
pounds/cubic foot	x	0.006944	=	pounds/sq inch/foot (psi/ft)
pounds/cubic foot	x	0.016026	=	specific gravity
pounds/cubic foot	x	0.016026	=	grams/cubic centimeter
pounds/cubic foot	x	16.026	=	kilograms/cubic meter
pounds/cubic inch	x	27.68	=	grams/cubic centimeter

pounds/cubic inch	x	27,680	=	kilograms/cubic meter
pounds/foot	x	1.4882	=	kilograms/meter
pounds/inch	x	178.60	=	grams/centimeter
pounds/gallon (ppg)	x	0.12005	=	specific gravity
pounds/gallon (ppg)	x	0.052	=	pounds/sq inch/foot (psi/ft)
pounds/gallon (ppg)	x	7.48	=	pounds/cubic foot
pounds/gallon (ppg)	x	0.1198	=	grams/cubic centimeter
pounds/square inch	x	0.0680	=	atmospheres
pounds/square inch	x	2.3095	=	feet of water
pounds/square inch	x	2.03602	=	inches of mercury
pounds/square inch	x	703.0696	=	kilograms/square meter
pounds/square inch	x	6.894757E+03	=	pascal
pounds/square inch	x	144	=	pounds/square foot
pounds/sq inch/foot(psi/ft)	x	19.23	=	pounds/gallon (US)
pounds/sq inch/foot(psi/ft)	x	144	=	pounds/cubic foot
pounds/sq inch/foot (psi/ft)	x	2.3095	=	specific gravity

Q [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
quadrants, angle	x	90	=	degrees
quadrants, angle	x	1.5708	=	radians
quarts, liquid	x	57.75	=	cubic inches (in ³)
quarts, liquid	x	9.46E-04	=	cubic meters (m ³)

R [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
radians	x	57.29	=	degrees
radians	x	3,438	=	minutes
radians	x	206,000	=	seconds
revolutions	x	360	=	degrees
revolutions	x	4	=	quadrants

revolutions	x	6.283185	=	radians
-------------	---	----------	---	---------

[S Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
seconds (angle)	x	2.78E-04	=	degrees
seconds (angle)	x	4.848137E-06	=	radians
short tons (st)	x	0.8929	=	long tons
short tons (st)	x	0.9071847	=	metric tons (t)
short tons (st)	x	2,000	=	pounds (lb)
short tons of crude oil	x	6.65	=	barrels (bbl)
specific gravity	x	1	=	grams/cubic centimeter
specific gravity	x	0.433	=	pounds/sq inch/foot (psi/ft)
specific gravity	x	8.33	=	pounds/gallon (US)
specific gravity	x	350.5	=	pounds/barrel
specific gravity	x	62.4	=	pounds/cubic foot
square centimeters (cm ²)	x	1.08E-03	=	square feet (ft ²)
square centimeters (cm ²)	x	0.1550	=	square inches (in ²)
square inch (in ²)	x	6.4516	=	square centimeter
square feet (ft ²)	x	2.2956E-05	=	acres
square feet (ft ²)	x	929.03	=	square centimeters (cm ²)
square feet (ft ²)	x	144	=	square inches (in ²)
square feet (ft ²)	x	0.09290304	=	square meters (m ²)
square feet (ft ²)	x	3.59E-08	=	square miles (mi ²)
square kilometers (km ²)	x	247.10	=	acres
square kilometers (km ²)	x	100	=	hectares
square kilometers (km ²)	x	0.386	=	square miles (mi ²)
square meters (m ²)	x	2.471E-04	=	acres
square meters (m ²)	x	10.763915	=	square feet (ft ²)
square meters (m ²)	x	3.86E-07	=	square miles (mi ²)
square miles (mi ²)	x	640	=	acres
square miles (mi ²)	x	27,900,000	=	square feet (ft ²)
square miles (mi ²)	x	2.589988	=	square kilometers (km ²)

T [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
therms	x	100,000	=	BTUs of natural gas
therms	x	1.054804E+08	=	joules (J)
tonnes	x	1.0	=	tons, metric
tons, long	x	1,016.047	=	kilograms (kg)
tons, long	x	1.016047	=	metric tons (t)
tons, long	x	2,240	=	pounds (lb)
tons, long	x	1.12	=	short tons (st)
tons, metric (t)	x	7.33	=	barrels of crude oil
tons, metric (t)	x	1,000	=	kilograms (kg)
tons, metric (t)	x	2,204.62	=	pounds (lb)
tons, short (st)	x	6.65	=	barrels of crude oil
tons, short (st)	x	0.8929	=	long tons
tons, short (st)	x	0.9071847	=	metric tons (t)
tons, short (st)	x	2,000	=	pounds (lb)

U [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
----------------------	----------------------	--------------------------	---------------	-------------------

V [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
----------------------	----------------------	--------------------------	---------------	-------------------

W [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
watts (W)	x	3.41219	=	British thermal units/hour
watts (W)	x	0.001341	=	horsepower (hp)

watts (absolute)	x	1	=	joules/second
watthours (Wh)	x	3.41219	=	British thermal units (Btu)
watthours (Wh)	x	2,656	=	foot-pounds
weeks	x	168	=	hours

X [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
---------------	---------------	-------------------	--------	------------

Y [Return to top of page](#)

Original Unit	Multiplied By	Conversion Factor	Equals	Final Unit
years (mean of 4-year period)	x	365.25	=	days
years (mean of 4-year period)	x	8,766	=	hours
years (mean of 4-year period)	x	526,000	=	minutes (time)
years (mean of 4-year period)	x	31,558,150	=	seconds (time)
years (mean of 4-year period)	x	52.17	=	week

Z [Return to top of page](#)

Prefixes Of International System Of Units

Numerical Value	Prefix	Symbol	Meaning	Exponential Expression
1 000 000 000 000 000 000	exa	E	Quintillion	10^{18}
1 000 000 000 000 000	peta	P	Quadrillion	10^{15}
1 000 000 000 000	tera	T	Trillion	10^{12}

1 000 000 000	giga	G	Billion	10^9
1 000 000	mega	M	Million	10^6
1 000	kilo	k	Thousand	10^3
100	hecto	h	Hundred	10^2
10	deca or deka	da	Ten	10^1
1				10^0
0.1	deci	d	One-tenth	10^{-1}
0.01	centi	c	one-hundredth	10^{-2}
0.001	milli	m	one-thousandth	10^{-3}
0.000 001	micro	μ	one-millionth	10^{-6}
0.000 000 001	nano	n	one-billionth	10^{-9}
0.000 000 000 001	pico	p	one-trillionth	10^{-12}
0.000 000 000 000 001	femto	f	one-quadrillionth	10^{-15}
0.000 000 000 000 000 001	atto	a	one-quintillionth	10^{-18}
Return to top of page				