

Multiple	by	To Get
inch	2.54	cm
This can also be written as: 1 inch = 2.54 cm		
A acre	43,560	ft ²
ampere-hr (A-h)	3,600	coulomb (C)
ångström (Å)	1x10 ⁻¹⁰	m
atm (atmosphere)	1.01325	bar
atm, std	76.0	cm of Hg
atm, std	760	mm of Hg at 0°C
atm, std	33.90	ft of water
atm, std	29.92	in of Hg at 30°F
atm, std	14.696	lbf/in ² abs (psia)
atm, std	101.325	kPa
atm, std	1.013x10 ⁵	Pa
atm, std	1.03323	kgf / cm ²
atm, std	14.696	psia
B bar	0.9869	atm, std
bar	1x10 ⁵	Pa
Btu	778.169	ft·lbf
Btu	1055.056	J
Btu	5.40395	psia·ft ³
Btu	2.928x10 ⁻⁴	kWh
Btu	1x10 ⁻⁵	therm
Btu / hr	1.055056	kJ / hr
Btu / hr	0.216	ft·lbf / sec
Btu / hr	3.929x10 ⁻⁴	hp
Btu / hr	0.2931	W
Btu / lbm	2.326*	kJ / kg
Btu / lbm	25.037	ft ² / s ²
Btu / lbm·R	4.1868	kJ / kg·K
Btu / lbm·°F	4.1868	kJ / kg·°C
Btu / lbmol·R	4.1868	kJ / kmol·K
C cal (g-calorie)	3.968x10 ⁻³	Btu
cal	1.560x10 ⁻⁶	hp·hr
cal (IT calorie)	4.1868	J
Calorie (Cal)	4.1868	kJ
cal / sec	4.1868	W (watt)
cm (centimeter)	0.03281	ft
cm	0.3937	in
cP (centipoise)	0.001	Pa·sec
cSt (centistokes)	1x10 ⁻⁶	m ² / sec
D degree	π/180	radian
dyne	10	μN (micronewton)
E eV (electronvolt)	1.602x10 ⁻¹⁹	J
erg	1x10 ⁻⁷	J
F ft (feet)	0.3048*	m
ft	30.48	cm
ft ²	2.2957x10 ⁻⁵	acre
ft ²	144	in ²
ft ²	0.09290304*	m ²
ft ³	7.481	gal (U.S.)
ft ³	0.02832	m ³
ft ³	28.317	L
ft ³ / lbm	0.062428	m ³ / kg
ft·lbf	1.285x10 ⁻³	Btu
ft·lbf	1.35582	J
ft·lbf	3.766x10 ⁻⁷	kWh
ft·lbf	1.35582	N·m
ft·lbf	0.324	calorie (g-cal)
ft·lbf / sec	1.818x10 ⁻³	hp
ft / s ²	0.3048*	m / s ²
G U.S. gallon (gal)	0.13368	ft ³
gal	3.7854	L
gal	3.7854x10 ⁻³	m ³
gal	231	in ³
gal (U.K.)	1.201	gal (U.S.)
gal (U.K.)	277.4	in ³
gal / min (gpm)	0.002228	ft ³ / sec
gamma (γ,Γ)	1x10 ⁻⁹	tesla (T)
gauss	1x10 ⁻⁴	T
gram (g)	2.205x10 ⁻³	lbm
g / cm ³	1	1 kg / L
g / cm ³	1000	kg / m ³
g / cm ³	62.428	lbm / ft ³
g / cm ³	1.940	slug / ft ³
g / cm ³	0.036127	lbm / in ³
H hectare	1x10 ⁴	m ²
hectare	2.47104	acres
hp (horsepower)	42.41	Btu / min
hp	0.7068	Btu / sec

hp	2544.5	Btu / hr
hp	745.70	W (watt)
hp	0.74570	kW
hp	33,000	ft·lbf / min
hp	550	ft·lbf / sec
hp·hr	2544	Btu
hp·hr	1.98x10 ⁶	ft·lbf
hp·hr	2.68x10 ⁶	J
in	2.54*	cm
in of Hg	0.0334	atm
in of Hg	13.60	in of water
in of Hg	3.387	kPa
in of water	0.0736	in of Hg
in of water	0.0361	lbf / in ² (psi)
in of water	0.002458	atm
J J (joule)	9.4782x10 ⁻⁴	Btu
J	6.2415x10 ¹⁸	eV
J	0.73756	ft·lbf
J	1	N·m
J	1x10 ⁷	ergs
J / s	1	W
K kg (kilogram)	2.2046226	lbm (pound mass)
kg	0.068522	slug
kg	1x10 ⁻³	metric ton
kg / m ³	0.062428	lbm / ft ³
kgf	9.80665	newton (N)
kip	1000	lbf
kip	4448	N
kJ	1	1 kPa·m ³
kJ	1000	N·m
kJ	0.94782	Btu
kJ	737.56	ft·lbf
kJ / kg	1000	m ² / s ²
kJ / kg	0.42992	Btu / lbm
kJ / kg·K	0.23885	Btu / lbm·°R
kJ / kg·°C	1	kJ / kg·K
kJ / kg·°C	1	J / g·°C
kJ / kg·°C	0.23885	Btu / lbm·°F
kJ / kg·°C	0.23885	Btu / lbm·R
km	3280.8	ft
km	0.6214	mi
km/hr	0.6214	mi / hr (mph)
km/hr	0.2778	m/s
km/hr	0.9113	ft/s
kPa (kilopascal)	9.8693x10 ⁻³	atm
kPa	0.14504	lbf / in ² (psi)
kW	3412.14	Btu / hr
kW	0.9478	Btu / sec
kW	737.56	lbf·ft / sec
kW	1.341	hp
kWh (kW-hour)	3412.14	Btu
kWh	1.341	hp·hr
kWh	3600	kJ
L L (liter)	0.03531	ft ³
L	61.02	in ³
L	0.2642	gal (U.S.)
L	0.001	m ³
L / s	2.119	ft ³ / min (cfm)
L / s	15.85	gal / min (gpm)
lbf (pound force)	32.174	lbm·ft / s ²
lbf	4.44822	N
lbf	32.17	poundals
lbf / in ² (psi)	0.06805	atm
lbf / in ²	2.307	ft water
lbf / in ²	2.036	in Hg
lbf / in ²	6894.757	Pa
lbm	0.45359237*	kg
lbm	0.031081	slug
lbm / in ³	1728	lbm / ft ³
lbm / ft ³	0.016018	g / cm ³
lbm / ft ³	16.018	kg / m ³
M m (meter)	3.28083	ft
m	1.0926	yard
m	39.370	in
m ²	1550	in ²
m ²	10.764	ft ²
m ³	1x10 ⁶	cm ³ (cc)
m ³	35.315	ft ³
m ³	264.17	gal (U.S.)
m ³	1000	L
m ³ / kg	16.02	ft ³ / lbm
m / s	196.8	ft / min

m / s	3.60	km / h
m / s	3.2808	ft / s
m / s	2.237	mi / h (mph)
m / s ²	3.2808	ft / s ²
metric ton	1000	kg
mil	0.001	in
mi (mile)	5280	ft
mi	1.6093	km
mi ² (square mile)	640	acres
mph (mile/hour)	1.6093	km / hr
mph	88.0	ft / min (fpm)
mph	1.467	ft / s
mph	0.4470	m / s
micron	1x10 ⁻⁶	m
mm of Hg	1.316x10 ⁻³	atm
mm of Hg	0.1333	kPa
mm of water	9.678x10 ⁻⁵	atm
N N (newton)	1	kg·m / s ²
N	1x10 ⁵	dyne
μN (microN)	0.1	dyne
N	0.22481	lbf
N·m	0.7376	ft·lbf
N·m	1	J
P Pa (pascal)	1	N / m ²
Pa	1.4504x10 ⁻⁴	lbf / in ² (psia)
Pa	0.020886	lbf / ft ²
Pa	9.869x10 ⁻⁶	atm
Pa·s	10	poise
psi (pounds per square inch) --- see lbf / in ²		
R radian	180/π	degree
S short ton	2000	lbm
short ton	907.1847	kg
slug	32.174	lbm
slug	14.5939	kg
slug / ft ³	0.5154	g / cm ³
stokes	1x10 ⁻⁴	m ² / s
T therm	1x10 ⁵	Btu
ton of refrigeration	200	Btu / min
W W (watt)	3.4121	Btu / hr
W	0.7376	ft·lbf / sec
W	1.341x10 ⁻³	hp
W	1	J / s
W / cm ²	1x10 ⁴	W / m ²
W / cm ³	1x10 ⁶	W / m ³
W / m ²	0.3171	Btu / (h·ft ²)
W / m ³	0.09665	Btu / (h·ft ³)
W / m·°C	1	W / m·K
W / m·°C	0.57782	Btu / (h·ft ² ·°F)
W / (m ² ·°C)	1	W / (m ² ·K)
W / (m ² ·°C)	0.17612	Btu / (h·ft ² ·°F)
weber / m ²	10,000	gauss

* The exact conversion between metric and English.

TEMPERATURE

T(K) = T(°C) + 273.15

T(R) = T(°F) + 459.67

T(°F) = 1.8 T(°C) + 32

SOME IMPORTANT CONSTANTS

Atomic Mass Unit (u)	=	1.66054x10 ⁻²⁷ kg
Avogadro's number (N _A)	=	6.02213x10 ²³ particles/mol
Boltzmann's constant (k _B)	=	1.38065x10 ⁻²³ J / K
electron charge (e)	=	-1.6022x10 ⁻¹⁹ C
electron mass (m _e)	=	9.10939x10 ⁻³¹ kg
proton mass (m _p)	=	1.6726x10 ⁻²⁷ kg
Gas Constant (R)	=	8314 J / kmol·K
Gravitational Constant (G)	=	6.672x10 ⁻¹¹ N·m ² / kg ²
Gravity (mean)	=	9.8067 (9.81) m / s ²
Planck's constant (h)	=	6.6260x10 ⁻³⁴ J·s
Speed of Light (c)	=	2.99792458x10 ⁸ m/s (exact)

SI PREFIXES

yocto (10⁻²⁴), zepto (10⁻²¹), atto (10⁻¹⁸), femto (10⁻¹⁵), pico (10⁻¹²), nano (10⁻⁹), micro (10⁻⁶), milli (10⁻³), centi (10⁻²), deci (10⁻¹), deka (10¹), hecto (10²), kilo (10³), mega (10⁶), giga (10⁹), tera (10¹²), peta (10¹⁵), exa (10¹⁸), zetta (10²¹), yotta (10²⁴)