



Origins in 1898

Useful Conversion Factors

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DRAWINGS ARE 'TYPICAL ONLY' AND NOT INTENDED FOR ENGINEERING PURPOSES

In these tables, the factors which involve conversion from the English System to the Metric System were selected to be consistent with the customary U.S. units and the new Systime International d'Unites (SI). Factors are consistent with factors published in the ASTM-API Metric Practice Guide E380-70.

The SI units were selected in order to facilitate a smooth and rapid transition from one system to another; leaving out the immediate step involving cgs units. It should be noted that the SI units are not exactly equal to the centimeter, gram, second (metric) system.

Two of the differences in values used in these tables are:

Unit	cgs	SI
Inch	0.0254000508 meters	0.254000000 meters
Liter	0.0001000028 cubic meter	0.0001000000 cubic meter

For a complete set of conversion factors and an explanation of the rules and symbols for the use of the SI units, refer to Metric Practice Guide, ASTM Designation E380-70 or API Standard 2563.

Velocity (Length/unit of time)

Ft./sec	Ft./min	Miles/hr	Meter/sec	Meter/min	k meter/hr
1	60	0.6818182	0.304800	18.28800	1.09728
0.0166667	1	0.0113646	0.0050800	0.304800	.018288
1.466666	88	1	0.4470400	26.82240	1.609344
3.28084	196.8504	2.236940	1	60.0	3.60000
0.0546807	3.28084	0.0372823	0.0166667	1	0.0600000
0.911344	54.68066	0.6214	0.277778	16.6667	1

Energy

Ft-lb	Kg-meter	BTU	Kg calories	Hp-hr	Watt-hr	Joule
1	0.1382550	0.001284067	0.000323583	5.0505×10^{-7}	0.000376616	1.355818
7.233011	1	.00928767	0.00234048	3.6530×10^{-6}	0.002724068	9.806647
778.770	107.6688	1	0.2519964	0.00039332	0.2932972	1055.8700
3090.533	427.2816	3.968311	1	0.00156081	1.163894	4190.0200
1980000	273744.9	2542.472	640.694	1	745.700	2684520
2655.224	367.0980	3.409511	0.859184	0.00134102	1	3600.000
0.737562	0.1019717	0.00094708	0.00023866	3.72506×10^{-7}	0.000277777	1

Entropy 1 Btu/lb.°F = 1 cal/g.°C

Enthalpy 1 BTU/lb = .5555 g calorie/g
1 g calorie/g = 1.8 BTU/lb

Grain = 1/7000 lb = 0.00014286 lb = 0.0648

Grain/100 SCF = 0.022883388 g/cu meter

Grain/gal = 0.17118 g/liter

Acceleration (free fall) = 32.17405 ft/sec² =
9.806650 m/sec²

Temperatures – conversion equations

Degrees Centigrade = °C = 5/9 (Degrees Fahrenheit – 32)

Degrees Fahrenheit = °F = 9/5 (Degrees Centigrade + 32)

Degrees Kelvin = °K = °C + 273.15 = 5/9 °R

Degrees Rankin = °R = °F + 459.67 = 9/5 °K

Degrees Celsius = °C (See Above)

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