

Table 2 Conversion Factors

Pressure psi	in. of water (60°F)	in. Hg (32°F)	atmosphere	mm Hg (32°F)	bar	kgf/cm ²	pascal
1	= 27.708	= 2.0360	= 0.068046	= 51.715	= 0.068948	= 0.07030696	= 6894.8
0.036091	1	0.073483	2.4559×10^{-3}	1.8665	2.4884×10^{-3}	2.537×10^{-3}	248.84
0.491154	13.609	1	0.033421	25.400	0.033864	0.034532	3386.4
14.6960	407.19	29.921	1	760.0	1.01325*	1.03323	$1.01325 \times 10^{5*}$
0.0193368	0.53578	0.03937	1.31579×10^{-3}	1	1.3332×10^{-3}	1.3595×10^{-3}	133.32
14.5038	401.86	29.530	0.98692	750.062	1	1.01972*	10 ^{5*}
14.223	394.1	28.959	0.96784	735.559	0.980665*	1	$9.80665 \times 10^{4*}$
1.45038×10^{-4}	4.0186×10^{-3}	2.953×10^{-4}	9.8692×10^{-6}	7.50×10^{-3}	10 ^{-5*}	$1.01972 \times 10^{-5*}$	1

Mass	lb (avoir.)	grain	ounce (avoir.)	kg
1	= 1	= 7000*	= 16*	= 0.45359
1.4286×10^{-4}	1	1	2.2857×10^{-3}	6.4800×10^{-5}
0.06250	437.5*	1	1	0.028350
2.20462	1.5432×10^4	35.274	1	1

Volume	cubic inch	cubic foot	gallon	litre	cubic metre (m ³)
1	= 1	= 5.787×10^{-4}	= 4.329×10^{-3}	= 0.0163871	= 1.63871×10^{-5}
1728*	1	1	7.48052	28.317	0.028317
231.0*	0.13368	1	1	3.7854	0.0037854
61.02374	0.035315	0.264173	1	1	0.001*
6.102374×10^4	35.315	264.173	1000*	1	1

Energy	Btu	ft·lb _f	calorie (cal)	joule (J) = watt-second (W·s)	watt-hour (W·h)
1	= 1	= 778.17	= 251.9958	= 1055.056	= 0.293071
1.2851×10^{-3}	1	1	0.32383	1.355818	3.76616×10^{-4}
3.9683×10^{-3}	3.08803	1	1	4.1868*	$1.163 \times 10^{-3*}$
9.4782×10^{-4}	0.73756	0.23885	1	1	2.7778×10^{-4}
3.41214	2655.22	859.85	3600*	1	1

Density	lb/ft ³	lb/gal	g/cm ³	kg/m ³
1	= 1	= 0.133680	= 0.016018	= 16.018463
7.48055	1	1	0.119827	119.827
62.4280	8.34538	1	1000*	1000*
0.0624280	0.008345	0.001*	1	1

Specific Volume	ft ³ /lb	gal/lb	cm ³ /g	m ³ /kg
1	= 1	= 7.48055	= 62.4280	= 0.0624280
0.133680	1	1	8.34538	0.008345
0.016018	0.119827	1	1	0.001*
16.018463	119.827	1000*	1	1

Viscosity (absolute)	1 poise = 1 dyne-sec/cm ² = 0.1 Pa·s = 1 g/(cm·s)				
poise	lb _f ·s/ft ²	lb _f ·h/ft ²	kg/(m·s) = N·s/m ²	lb _m /ft·s	
1	= 2.0885×10^{-3}	= 5.8014×10^{-7}	= 0.1*	= 0.0671955	
478.8026	1	2.7778×10^{-4}	47.88026	32.17405	
1.72369×10^6	3600*	1	1.72369×10^5	1.15827×10^5	
10*	0.020885	5.8014×10^{-6}	1	0.0671955	
14.8819	0.031081	8.6336×10^{-6}	1.4882	1	

Temperature Scale	Temperature				Temperature Interval			
	K	°C	°R	°F	K	°C	°R	°F
Kelvin	x K = x	x - 273.15	1.8x	1.8x - 459.67	1 K = 1	1	9/5 = 1.8	9/5 = 1.8
Celsius	x°C = x + 273.15	x	1.8x + 491.67	1.8x + 32	1°C = 1	1	9/5 = 1.8	9/5 = 1.8
Rankine	x°R = x/1.8	(x - 491.67)/1.8	x	x - 459.67	1°R = 5/9	5/9	1	1
Fahrenheit	x°F = (x + 459.67)/1.8	(x - 32)/1.8	x + 459.67	x	1°F = 5/9	5/9	1	1

Notes: Conversions with * are exact.
The Btu and calorie are based on the International Table.

All temperature conversions and factors are exact.
The term centigrade is obsolete and should not be used.

When making conversions, remember that a converted value is no more precise than the original value. For many applications, rounding off the converted value to the same number of significant figures as those in the original value provides sufficient accuracy.

Caution: The conversion values in Table 1 are rounded to three or four significant figures, which is sufficiently accurate for most applications. See ANSI Standard SI-10 (available from ASTM or IEEE) for additional conversions with more significant figures.