

**TABLES AND CHARTS
CONVERSION FACTORS**

Multiply units in left column by proper factor below								
Units of Length	in.	ft.	yd.	mile	mm.	cm	m.	km.
1 inch	1	0.0833	0.0278	----	25.40	2.540	0.0254	----
1 foot	12	1	0.333	----	304.8	30.48	0.3048	----
1 yard	36	3	1	----	914.4	9144	0.9144	----
1 mile	----	5280	1760	1	----	----	1609.3	1.609
1 millimeter	0.0394	0.0033	----	----	1	0.100	0.001	----
1 centimeter	0.3937	0.0328	0.0109	----	10	1	0.01	----
1 meter	39.37	3.281	1.904	----	1000	100	1	0.001
1 kilometer	----	3281	1094	0.6214	----	----	1000	1

(1 micron = 0.001 millimeter)

Multiply units in left column by proper factor below							
Units of Area	sq. in	sq. ft	acre	sq. mile	sq. cm.	sq. m.	hectare
1 sq. inch	1	0.0069	----	----	6.452	----	----
1 sq. foot	144	1	----	----	929.0	0.0929	----
1 acre	----	43,560	1	0.001	----	4047	0.4047
1 sq. mile	----	----	640	1	----	----	259.0
1 sq. centimeter	0.1550	----	----	----	1	0.0001	----
1 sq. meter	1550	10.76	----	----	10,000	1	----
1 hectare	----	----	2.471	----	----	10,000	1

Multiply units in left column by proper factor below								
Units of Volume	cu. in.	cu. ft.	cu. yd.	cu. cm.	cu. meter	liter	U.S. Gal.	Imp. gal.
1 cu. inch	1	----	----	16387	----	00164	----	----
1 cu. foot	1728	1	0.0370	28.317	0.028	28.32	7.481	6.229
1 cu. yard	46,656	27	1	----	0.7646	764.5	202.0	168.2
1 cu. centimeter	00610	----	----	1	----	00010	----	----
1 cu. meter	61,023	35.31	1.308	1,000,000	1	999.97	264.2	220.0
1 liter	61.025	0.0353	----	1000.028	0.0010	1	02642	0.2200
1 US gallon	231	0.1337	----	3785.4	----	3.785	1	0.8327
1 Imperial gallon	277.4	0.1605	----	4546.1	----	4.546	1.201	1

Multiply units in left column by proper factor below							
Unit of Weight	grain	oz.	lb.	ton	gram	kg.	metric ton
1 grain	1	----	----	----	0.0648	----	----
1 ounce	437.5	1	0.0625	----	28.35	0.0283	----
1 pound	7000	16	1	0.0005	453.6	0.4536	----
1 ton	----	32,000	2000	1	----	907.2	0.9072
1 gram	15.43	0.0353	----	----	1	0.001	----
1 kilogram	----	35.27	2.205	----	1000	1	0.001
1 metric ton	----	35,274	2205	1.1023	----	1000	1

Multiply units in left column by proper factor below					
Units of Density	lb/cu. in.	lb/cu. ft.	lb/gal.	g/cu. cm.	g/liter
1 pound/cu. in.	1	1728	231.0	27.68	27,680
1 pound/cu.ft.	----	1	0.1337	0.0160	16.019
1 pound/gal.	0.00433	7.481	1	0.1198	119.83
1 gram/cu. cm.	0.0361	62.43	8.345	1	1000.0
1 gram/liter	----	0.0624	0.00835	0.001	1

Multiply units in left column by proper factor below							
Unit of Pressure	lb/sq. in.	lb/sq. ft	int. ata.	kg/cm ²	mm Hg at 32 F	in. Hg at 32 F	ft. water at 39.2 F
1 pound/sq. in.	1	144	----	0.0703	51.713	2.0359	2.307
1 pound/sq. ft.	0.00694	1	----	----	0.3591	0.01414	0.01602
1 intern. atmosphere	14.696	2116.2	1	1.0333	760	29.921	33.90
1 kilogram/sq. cm.	14.223	2048.1	0.9678	1	735.56	28.958	32.81
1 mm-mercury 1 torr (torricelli)	0.0193	2.785	----	----	1	0.0394	0.0446
1 inch mercury	0.4912	70.73	0.0334	0.0345	25.400	1	1.133
1 foot water	0.4335	62.42	----	0.0305	22.41	0.8826	1

Multiply units in left column by proper factor below						
Units of Energy	ft-lb.	Btu	g. Cal.	Joule	kw-hr.	ph-hr.
1 foot-pound	1	0.001285	0.3240	1.3556	----	----
1 Btu	778.2	1	252.16	1054.9	----	----
1 gram	3.0860	0.003966	1	4.1833	----	----

calorie						
1 int. Joule	0.7377	0.000948	0.2390	1	----	----
1 int. kilowatt-hour	2,655,656	3412.8	860,563	----	1	1.3412
1 horsepower-hour	1,980,000	2544.5	641,617	----	0.7456	1

Multiply units in left column by proper factor below					
Units of Specific Energy	absolute Joule/g	int. Joule/g	Cal/s	int. Cal/g	Btu/lb.
1 absolute Joule/gram	1	0.99984	0.23901	0.23885	0.42993
1 int. Joule/gram	1.000165	1	0.23904	0.23892	0.43000
1 calorie/gram	4.1840	4.1833	1	0.99935	1.7988
1 int. calorie/gram	4.1867	4.1860	1.00065	1	1.8000
1 Btu/lb.	2.3260	2.3256	0.55592	0.55556	1

Multiply units in left column by proper factor below									
Units of Power (rate of energy use)	hp	Watt	kw	Btu./min	Btu./hr.	ft-lb/sec	ft-lb/min	g.Cal/sec	metric hq
1 horsepower	1	745.7	0.7475	42.41	2544.5	550	33.000	178.2	1.014
1 Watt	----	1	0.001	0.0569	3.413	0.7376	44.25	0.2390	0.00136
1 kilowatt	1.3410	1000	1	56.88	3412.8	737.6	44254	239.0	1.360
1 Btu per min.	----	----	----	1	60	12.97	778.2	4.203	0.0239
1 metric hp	0.9863	735.5	0.7355	41.83	2509.6	542.5	32.550	175.7	1

Multiply units in left column by proper factor below						
Units of Refrigeration	Btu (IT)/min	Btu (IT)/hr.	kg Cal/hr.	1 ton (U.S.) comm	ton (Brit.) comm	frigorie/hr.
1 ton (U.S.) comm	200	12,000	3025.9	1	08965	3025.9
1 ton (Brit) comm	223.08	13,385	3375.2	1.1154	1	3025.9
1 frigorie/hr.	0.06609	3.9657	1	0.000330	0.0002963	1

NOTE: Btu is International Steam Table Btu (IT). 1 frigorie = 1kg casl (**Not** IT).