Thermal transmission (heat transferred per unit time) ..... q

$$q = \frac{Q}{t}$$

Thermal resistance (degrees per unit of heat transferred per unit time) ..... R

$$R = \frac{t_1 - t_2}{q} = \frac{L}{kA}$$

Thermal resistivity ..... $1/k$
Vaporization values at constant pressure, Differences between values for saturated vapor and saturated liquid at the same pressure ..... Subscript $_{fg}$
Velocity V
Volume (total) V
Volume per unit time, Rate at which quantity of material passes through a machine, Quantity of heat per unit time, Quantity of heat per unit weight ..... q
Watt ..... w
Watthour ..... whr
Weight of a major item, Total weight ..... W
Weight rate, Weight per unit of power, Weight per unit of time ..... w
Work (total) ..... W

CONVERSION EQUATIONS

Heat, Power and Work

1 ton refrigeration	= 12,000 Btu per hour = 200 Btu per minute
Latent heat of ice	= 143.4 Btu per pound
1 Btu	= 778.26 ft-lb = 0.293 whr = 252 mean calories
1 watthour	= 2,655 ft-lb = 3.413 Btu = 3600 joules = 860 mean calories
1 kilowatthour	= 3,413 Btu = 3.517 lb water evaporated from and at 212 F
1 kilowatt (1000 watts)	= 1.341 hp = 56.88 Btu per minute = 44,253 ft-lb per minute
1000 mean calorie 1 kilogram calorie	= 3.969 Btu = 3087 ft-lb = 1.1627 whr
1 horsepower	= 0.746 kw = 42.42 Btu per minute = 33,000 ft-lb per minute = 550 ft-lb per second
1 boiler horsepower	= 33,475 Btu per hour = 9.808 kw

Weight and Volume

1 gal (U. S.)	= 231 cu in. = 0.1337 cu ft
1 British or Imperial gallon	= 277.42 cu in.
1 cu ft	= 7.48 gal = 1728 cu in.
1 cu ft water at 60 F	= 62.37 lb
1 cu ft water at 212 F	= 59.83 lb
1 gal water at 60 F	= 8.34 lb
1 gal water at 212 F	= 7.998 lb
1 lb (avdp)	= 16 oz = 7000 grains
1 bushel	= 1.244 cu ft
1 short ton	= 2000 lb

Pressure

1 lb per square inch	= 144 lb per square foot = 2.0421 in. mercury at 62 F = 2.309 ft water at 62 F = 27.71 in. water at 62 F
1 oz per square inch	= 0.1276 in. mercury at 62 F = 1.732 in. water at 62 F
1 atmosphere	= 14.6959 lb per square inch = 2117 lb per square foot = 33.9 ft water at 62 F = 30 in. mercury at 62 F = 29.921 in. mercury at 32 F
1 in. water at 62 F	= 0.03609 lb per square inch = 0.5774 oz per square inch = 5.196 lb per square foot
1 ft water at 62 F	= 0.433 lb per square inch = 62.35 lb per square foot
1 in. mercury at 62 F	= 0.491 lb per square inch = 7.84 oz per square inch = 1.131 ft water at 62 F = 13.58 in. water at 62 F

Metric Units

1 cm	= 0.3937 in.
1 in.	= 2.540 cm
1 m	= 3.281 ft
1 ft	= 0.3048 m
1 sq cm	= 0.155 sq in.
1 sq in.	= 6.452 sq cm
1 sq m	= 10.76 sq ft
1 sq ft	= 0.0929 sq m
1 cu cm	= 0.06102 cu in.
1 cu in.	= 16.39 cu cm
1 cu m	= 35.31 cu ft
1 cu ft	= 0.02831 cu m
1 liter	= 1000 cu cm = 0.2642 gal
1 kg	= 2.205 lb (avdp)
1 lb	= 0.4536 kg
1 metric ton	= 2205 lb (avdp)
1 gram	= 0.002205 lb (avdp)
1 kilometer per hour	= 0.6214 mph
1 gram per square centimeter	= 0.02905 in. mercury at 62 F = 0.3944 in. water at 62 F
1 kg per sq cm (metric atmosphere)	= 14.22 lb per square inch
1 gram per cubic centimeter	= 0.03613 lb per cubic inch = 62.43 lb per cubic foot
1 dyne	= 0.00007233 poundals
1 joule	= 10,000,000 ergs = 0.7376 ft-lb
1 metric horsepower	= 75 kg-m per second = 0.986 hp (U. S.)
1 kilogram-calorie per kilogram	= 1.8 Btu per pound
1 gram-calorie per square centimeter	= 3.687 Btu per square foot
1 gram-calorie per square centimeter per centimeter	= 1.452 Btu per sq ft per inch
1 gram-calorie per second per square centimeter for a temperature gradient of 1 deg C per centimeter.	= 2903 Btu per hour per square foot for a temperature gradient of 1 deg F per inch of thickness.