

Appendix B

Common Conversions

1 Btu	252.0 cal
	1055 J
1 Btu/ft ³	0.00890 cal/cm ³
	0.0373 MJ/m ³
1 Btu/hr	0.0003931 hp
	0.2520 kcal/hr
	0.2931 W
1 million Btu/hr	0.293 MW
1 Btu/hr-ft ²	0.003153 kW/m ²
1 Btu/hr-ft ² -°F	1.730 W/m ² -K
1 Btu/hr-ft ² -°C	5.67 W/m ² -K
1 Btu/lb	0.5556 cal/g
	2326 J/kg
1 Btu/lb-°F	1 cal/g-°C
	4187 J/kg-K
1 cal	0.003968 Btu
	4.187 J
1 cal/cm ² -sec	3.687 Btu/ft ² -sec
	41.87 kW/m ²
1 cal/cm-sec-°C	241.9 Btu/ft-hr-°F
	418.7 W/m-K
1 cal/g	1.80 Btu/lb
	4187 J/kg
1 cal/g-°C	1 Btu/lb-°F
	4187 J/kg-K
1 centipoise	2.421 lbm/hr-ft
1 cm ² /sec	100 centistokes
	3.874 ft ² /hr
1 ft	0.3048 m
1 ft ² /s	0.0929 m ² /sec
1 g/cm ³	1000 kg/m ³
	62.43 lb/ft ³
	0.03613 lb/in. ³

1 hp	33,000 ft-lb/min 550 ft-lb/sec 641.4 kcal/hr 745.7 W
1 in.	2.540 cm 25.40 mm
1 J	0.000948 Btu 0.239 cal 1 W/sec
1 kcal	3.968 Btu 1000 cal 4187 J
1 kcal/hr	3.968 Btu/hr 1.162 J/sec
1 kcal/m ³	0.1124 Btu/ft ³ 4187 J/m ³
1 kg	2.205 lb
1 kg/hr-m	0.00278 g/sec-cm 0.672 lb/hr-ft
1 kg/m ³	0.06243 lb/ft ³
1 kW	3413 Btu/hr 1.341 hp 660.6 kcal/hr
1 kW/m ²	317.2 Btu/hr-ft ²
1 kW/m ² -°C	176.2 Btu/hr-ft ² -°F
1 lb	0.4536 kg
1 lb/ft ³	0.0160 g/cm ³ 16.02 kg/m ³
1 lbm/hr-ft	0.413 centipoise
1 m	3.281 ft
1 mm	0.03937 in.
1 m ² /s	10.76 ft ² /sec
1 m-ton	1000 kg 2205 lb
1 MW	3,413,000 Btu/hr 1000 kW
1 therm	100,000 Btu
1 W	1 J/sec
1 W/m-K	0.5778 Btu/ft-hr-°F

Temperature Conversions

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

$$\text{K} = ^{\circ}\text{C} + 273.15$$

$$^{\circ}\text{F} = 9/5(^{\circ}\text{C}) + 32$$

$$^{\circ}\text{R} = ^{\circ}\text{F} + 459.67$$