

■ **TABLE 1.3**

Conversion Factors from BG and EE Units to SI Units^a

	To Convert from	to	Multiply by
Acceleration	ft/s ²	m/s ²	3.048 E − 1
Area	ft ²	m ²	9.290 E − 2
Density	lbm/ft ³	kg/m ³	1.602 E + 1
Energy	slugs/ft ³	kg/m ³	5.154 E + 2
	Btu	J	1.055 E + 3
	ft · lb	J	1.356
Force	lb	N	4.448
Length	ft	m	3.048 E − 1
	in.	m	2.540 E − 2
	mile	m	1.609 E + 3
Mass	lbm	kg	4.536 E − 1
	slug	kg	1.459 E + 1
Power	ft · lb/s	W	1.356
	hp	W	7.457 E + 2
Pressure	in. Hg (60 °F)	N/m ²	3.377 E + 3
	lb/ft ² (psf)	N/m ²	4.788 E + 1
	lb/in. ² (psi)	N/m ²	6.895 E + 3
Specific weight	lb/ft ³	N/m ³	1.571 E + 2
Temperature	°F	°C	$T_C = (5/9)(T_F - 32°)$
	°R	K	5.556 E − 1
Velocity	ft/s	m/s	3.048 E − 1
	mi/hr (mph)	m/s	4.470 E − 1
Viscosity (dynamic)	lb · s/ft ²	N · s/m ²	4.788 E + 1
Viscosity (kinematic)	ft ² /s	m ² /s	9.290 E − 2
Volume flowrate	ft ³ /s	m ³ /s	2.832 E − 2
	gal/min (gpm)	m ³ /s	6.309 E − 5

^aIf more than four-place accuracy is desired, refer to Appendix E.

■ **TABLE 1.4**

Conversion Factors from SI Units to BG and EE Units^a

	To Convert from	to	Multiply by
Acceleration	m/s ²	ft/s ²	3.281
Area	m ²	ft ²	1.076 E + 1
Density	kg/m ³	lbm/ft ³	6.243 E - 2
Energy	kg/m ³	slugs/ft ³	1.940 E - 3
	J	Btu	9.478 E - 4
	J	ft · lb	7.376 E - 1
Force	N	lb	2.248 E - 1
Length	m	ft	3.281
	m	in.	3.937 E + 1
	m	mile	6.214 E - 4
Mass	kg	lbm	2.205
	kg	slug	6.852 E - 2
Power	W	ft · lb/s	7.376 E - 1
	W	hp	1.341 E - 3
Pressure	N/m ²	in. Hg (60 °F)	2.961 E - 4
	N/m ²	lb/ft ² (psf)	2.089 E - 2
	N/m ²	lb/in. ² (psi)	1.450 E - 4
Specific weight	N/m ³	lb/ft ³	6.366 E - 3
Temperature	°C	°F	$T_F = 1.8 T_C + 32^\circ$
	K	°R	1.800
Velocity	m/s	ft/s	3.281
	m/s	mi/hr (mph)	2.237
Viscosity (dynamic)	N · s/m ²	lb · s/ft ²	2.089 E - 2
Viscosity (kinematic)	m ² /s	ft ² /s	1.076 E + 1
Volume flowrate	m ³ /s	ft ³ /s	3.531 E + 1
	m ³ /s	gal/min (gpm)	1.585 E + 4

^aIf more than four-place accuracy is desired, refer to Appendix E.