



# Conversion Factors

Multiply	By	To Obtain
<b>DENSITY</b>		
g/cm <sup>3</sup>	62.43	lb/ft <sup>3</sup>
	0.03613	lb/in <sup>3</sup>
	8.345	lb/gal
lb/ft <sup>3</sup>	16.02	kg/m <sup>3</sup>
lb/in <sup>3</sup>	1728	lb/ft <sup>3</sup>
	27.68	g/cm <sup>3</sup>
<b>PRESSURE</b>		
atm	101.3	kPa
	760	mm of Hg
	29.92	in of Hg
	33.90	ft of H <sub>2</sub> O
	10330	kg/m <sup>2</sup>
	14.70	lb/in <sup>2</sup>
	2116	lb/ft <sup>2</sup>
	1.013	bar
	1.033	kg/cm <sup>2</sup>
bar	100	kPa
cm of Hg	5.353	in of H <sub>2</sub> O
	0.4460	ft of H <sub>2</sub> O
	1.333	kPa
	0.1934	lb/in <sup>2</sup>
	27.84	lb/ft <sup>2</sup>
	136.0	kg/m <sup>2</sup>
ft of H <sub>2</sub> O	0.02950	atm
	0.4335	lb/in <sup>2</sup>
	62.43	lb/ft <sup>2</sup>
	2.989	kPa
in of Hg	0.03342	atm
	13.60	in of H <sub>2</sub> O
	1.133	ft of H <sub>2</sub> O
	3.386	kPa
	0.4912	lb/in <sup>2</sup>
	70.73	lb/ft <sup>2</sup>
	345.3	kg/m <sup>2</sup>
in of H <sub>2</sub> O	0.2491	kPa
	0.03612	lb/in <sup>2</sup>
	5.202	lb/ft <sup>2</sup>
	25.40	kg/m <sup>2</sup>
kg/cm <sup>2</sup>	0.9678	atm
	98.07	kPa
	14.22	lb/in <sup>2</sup>
lb/in <sup>2</sup>	70.31	g/cm <sup>2</sup>
	6.895	kPa
	2.036	in of Hg
	2.307	ft of H <sub>2</sub> O
<b>FLOW</b>		
ft <sup>3</sup> /min	471.9	cm <sup>3</sup> /sec
	28.32	ltr/min
ft <sup>3</sup> /hr	7.866	cm <sup>3</sup> /sec
	.4719	ltr/min
ft <sup>3</sup> /sec	28.32	ltr/sec
	1699	ltr/min
	28320	cm <sup>3</sup> /sec
gal/hr	6.309 x 10 <sup>5</sup>	m <sup>3</sup> /min
	3.785	ltr/hr
ltr/min	0.03531	ft <sup>3</sup> /min
	2.119	ft <sup>3</sup> /hr
<b>HEATING VALUE</b>		
Btu/ft <sup>3</sup>	0.03725	J/cm <sup>3</sup>
Btu/lb	2.326	J/g

Multiply	By	To Obtain
<b>VOLUME</b>		
cm <sup>3</sup>	0.001	ltr
	0.0610	in <sup>3</sup>
ltr	0.2642	gal
	0.03531	ft <sup>3</sup>
	1.057	qt
	61.02	in <sup>3</sup>
ft <sup>3</sup>	28320	cm <sup>3</sup>
	1728	in <sup>3</sup>
	0.03704	yd <sup>3</sup>
	7.481	gal
	28.32	ltr
	0.02832	m <sup>3</sup>
in <sup>3</sup>	16.39	cm <sup>3</sup>
	0.01639	ltr
	4.329 x 10 <sup>3</sup>	gal
	0.01732	qt
	1.639 x 10 <sup>5</sup>	m <sup>3</sup>
g-mol of Ideal Gas @ 0°C & 760 mm Hg		
	22.41	ltr
lb-mol of Ideal Gas @ 0°C & 760 mm Hg		
	359.0	ft <sup>3</sup>
<b>MASS</b>		
lb	0.4536	kg
	453.6	g
lb of H <sub>2</sub> O	0.01602	ft <sup>3</sup>
	27.68	in <sup>3</sup>
	0.1198	gal
oz	28.35	g
ton (long)	1016	kg
	2240	lb
ton (short)	907.2	kg
	2000	lb
<b>VISCOSITY (Absolute)</b>		
P	1	g/(cm)(sec)
	1	(dyn)(sec)/cm <sup>2</sup>
	100	cP
cP	6.720 x 10 <sup>4</sup>	lb/(ft)(sec)
	2.089 x 10 <sup>5</sup>	(lb)(sec)/ft <sup>2</sup>
	2.419	lb/(ft)(hr)
<b>VISCOSITY (Kinematic)</b>		
St	1	cm <sup>2</sup> /sec
	0.1549	in <sup>2</sup> /sec
	1.076 x 10 <sup>3</sup>	ft <sup>2</sup> /sec
	density (g/cm <sup>3</sup> )	P
<b>TEMPERATURE</b>		
°F = 1.8 (°C) + 32	K = °C + 273.2	°R = °F + 459.7
<b>MISCELLANEOUS PHYSICAL CONSTANTS</b>		
<b>NUMERICAL</b>		
<b>CONSTANT</b>	<b>VALUE</b>	<b>UNITS</b>
Avogadro's Number	6.022 x 10 <sup>23</sup>	molecules/g-mol
Gas-Law Constant R	1.987	cal/(g-mol)(K)
	1.987	Btu/(lb-mol)(°R)
	82.06	(cm <sup>3</sup> )(atm)/(g-mol)(K)
	0.08206	(ltr)(atm)/(g-mol)(K)
	1545	(ft)(lb-force)/(lb-mol)(°R)
	0.7302	(ft <sup>3</sup> )(atm)/(lb-mol)(°R)
	8314	J/(k-mol)(K)

**Key**

atm . . . . . atmosphere	dyn . . . . . dyne	Hg . . . . . mercury	k-mol . . . . . kilo mole	m <sup>3</sup> . . . . . cubic meter
bar . . . . . bar	°F . . . . . degree Fahrenheit	H <sub>2</sub> O . . . . . water	ltr . . . . . liter	oz . . . . . ounce
Btu . . . . . British thermal unit	ft . . . . . foot	in . . . . . inch	lb . . . . . pound	P . . . . . poise
°C . . . . . degree Celsius	ft <sup>2</sup> . . . . . square foot	in <sup>2</sup> . . . . . square inch	lb-force . . . . . pound force	qt . . . . . quart
cal . . . . . calorie, thermochemical	ft <sup>3</sup> . . . . . cubic foot	in <sup>3</sup> . . . . . cubic inch	lb-mol . . . . . pound mole	°R . . . . . degree Rankine
cP . . . . . centipoise	g . . . . . gram	J . . . . . joule	m . . . . . meter	sec . . . . . second
cm . . . . . centimeter	gal . . . . . gallon	K . . . . . kelvin	min . . . . . minute	St . . . . . stokes
cm <sup>2</sup> . . . . . square centimeter	g-mol . . . . . gram mole	kg . . . . . kilogram	mm . . . . . millimeter	yd <sup>3</sup> . . . . . cubic yard
cm <sup>3</sup> . . . . . cubic centimeter	hr . . . . . hour	kPa . . . . . kilopascal	m <sup>2</sup> . . . . . square meter	