

Fundamental Conversion Factors

Gas Constant:		R =	10.73164 ft³·psia/°R·lb.mol 82.05785 (cm ³ ·atm)/(K·g.mol) 1.985887 Btu/(°R·lb.mol) 1.985887 cal/(K·g.mol) 8.314511 J/(K·g.mol)
Temperature:	0	F =	459.67 R
	0	C =	273.15 K
	1	K =	1.8 R
Pressure:	1	atm =	14.69594878 psia
	1	atm =	101.325 kPa
	1	atm =	1.01325 bar
	1	atm =	760 mmHg
	1	psi =	6.894757293 kPa
	1	kPa =	0.01 bar
	1	inH ₂ O =	0.036091191 psi
	1	mmHg =	0.019336775 psi
Gas Gravity:		M _{air} =	28.9625
Liquid Gravity:	1	SG =	8.337200919 lb/gal
	1	SG =	62.36659389 lb/ft ³
	1	SG =	0.999017 g/cm ³
	1	SG =	999.017 kg/m³
	1	SG =	0.999017 kg/L
Length:	1	in =	2.54 cm
	1	ft =	12 in
	1	ft =	30.48 cm
	1	ft =	0.3048 m
	1	m =	3.280839895 ft
Area:	1	in ² =	6.4516 cm ²
	1	ft ² =	144 in ²
	1	ft ² =	929.0304 cm ²
	1	ft ² =	0.09290304 m ²
	1	acre =	43560 ft²
	1	m ² =	10.76391042 ft ²

Volume:	1	gal =	231 in³
	1	gal =	3785.411784 cm ³
	1	gal =	0.003785412 m ³
	1	bbbl =	42 gal
	1	ft ³ =	1728 in ³
	1	ft ³ =	28316.84659 cm ³
	1	ft ³ =	7.480519481 gal
	1	ft ³ =	0.178107607 bbl
	1	m ³ =	35.31466672 ft ³
	1	m ³ =	264.1720524 gal
	1	m ³ =	6.28981077 bbl
	1	acre-ft =	325851.4286 gal

Mass:	1	lb =	453.59237 g
	1	lb =	0.45359237 kg
	1	kg =	2.204622622 lb
	1	kg =	2.204622622 lb
	1	tonne =	1000 kg
	1	tonne =	2204.622622 lb

Density:	1	g/cm ³ =	62.42796058 lb/ft ³
	1	lb/ft ³ =	0.133680556 lb/gal
	1	lb/ft ³ =	16.01846337 kg/m ³
	1	lb/ft ³ =	0.016018463 g/cm ³
	1	kg/m ³ =	0.062427961 lb/ft ³

Energy:	1	Btu =	251.9958 cal
	1	Btu =	1055.0558526 J
	1	Btu =	778.1693 ft-lbf
	1	cal =	4.1868 J
	1	cal =	0.003968321 Btu
	1	J =	0.0009478171 Btu

Force:	1	lbf =	4.448221615 N
	1	lbf =	444822.1615 dyne

Viscosity:	1	P =	1 dyne-sec/cm²
	1	P =	100 cP
	1	P =	1.45038E-05 lbf-sec/in ²
	1	P =	0.067196898 lb/ft-sec
	1	cP =	1.45038E-07 lbf-sec/in ²
	1	cP =	0.000671969 lb/ft-sec

Other:	g _c =	9.80665 kg_m·m/(kg_f·sec²)
	=	32.17405 lb _m ·ft/(lb _f ·sec ²)

Composition of dry air close to sea level:

Mass Ratio N ₂ /O ₂ =	3.2632
Mass Ratio CO ₂ /O ₂ =	0.0020