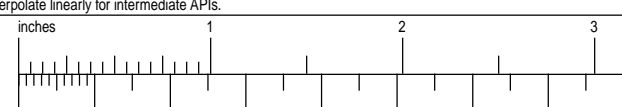



Measurement Conversion Data

English to Metric*

Known	(symbol)	Multiplier	Product	(symbol)
LENGTH				
inches	(in or ")	2.54 x 10 ⁴	micron [=10,000 Angstrom units (A)]	(μ)
inches	(in or ")	25.4	millimeters	(mm)
feet	(ft or')	30.48	centimeters	(cm)
feet	(ft or')	0.3048	meters	(m)
yards	(yd)	0.9144	meters	(m)
miles (statute)	(mi)	1.6093	kilometers	(km)
nautical miles	(nmi)	1.85	kilometers	(km)
AREA				
square inches	(in ²)	6.4516	square centimeters	(cm ²)
square feet	(ft ²)	0.0929	square meters	(m ²)
square yards	(yd ²)	0.8361	square meters	(m ²)
square miles (1 square mile = 640 acres)	(mi ²)	2.5900	square kilometers	(km ²)
acres	(ac)	0.405	hectares	(ha)
VOLUME				
cubic inches	(in ³)	16.3871	cubic centimeters	(cm ³)
cubic feet	(ft ³)	0.02832	cubic meters	(m ³)
cubic yards	(yd ³)	0.7646	cubic meters	(m ³)
cubic miles	(mi ³)	4.1684	cubic kilometers	(km ³)
quarts (U.S. liquid)	(qt)	0.9463	liters (=1000 cm ³)	(l)
gallons (U.S. liquid) (=0.8327 Imperial gal)	(gal)	3.7854	liters	(l)
barrels	(bbl)	0.159	cubic meters	(m ³)
barrels 32°AP1 (For other densities, see table on next page.)	(bbl)	0.137	metric tons	(MT)
barrels (petroleum — 1 bbl = 42 gal)	(bbl)	158.9828	liters	(l)
acre-feet (=43,560 ft ³ =3.259 x 10 ⁶ gal)	(acre-ft)	1233.5019	cubic meters	(m ³)
MASS				
ounces (avdp.)	(oz)	28.3495	grams	(g)
ounces (avdp.) 1 troy oz.=0.083 lb)				
pounds (avdp.)	(lb)	0.4536	kilograms	(kg)
short tons (2000 lb)		0.9072	megagrams (= metric tons)	(Mg)
long tons (2240 lb)		1.0160	megagrams	(Mg)
carats (gems)	(c)	0.2000	grams	(g)
VOLUME PER UNIT TIME				
cubic feet per second (= 448.83 gal/in in)	(ft ³ /s)	0.02832	cubic meters per second	(m ³ /s)
cubic feet per second	(ft ³ /s)	28.3161	cubic decimeters per second (= liters per second)	(dm ³ /s)
cubic feet per minute (= 7.48 gal/mm)	(ft ³ /min)	0.47195	liters per second	(us)
gallons per minute	(gal/min)	0.06309	liters per second	(us)
barrels per day (petroleum — 1 bbl = 42 gal)	(bbl/d)	0.00184	liters per second	(us)
PRESSURE				
pound (force) per square inch	(lb-f/in ²) (=PSI)	6.8948	kilopascal (kPa) (1 Pascal = $\frac{1 \text{ Newton}}{\text{m}^2}$ = $\frac{\text{kg} \cdot \text{in}}{\text{sec}^2 \cdot \text{m}^2}$)	
atmosphere (= 14.6960 PSI = 1.01325 bars)	(atm)	101.325		
bar (= 14.5038 PSI=0.9869 atm)		100.0		
TEMPERATURE				
temperature, degrees Fahrenheit	(°F)	5/9 (after subtracting 32)	temperature, degrees Celsius	(°C)
temperature, degrees Fahrenheit		5/9 (after adding 459.67)	temperature Kelvin	(K)
temperature, degrees Celsius	(°C)	add 273.15	temperature Kelvin	(K)
THERMAL GRADIENT				
1°F/100 ft = 1.8°C/100 in = 18°C/km				
CRUDE OIL VOLUME PER BARREL				
Degrees API	Specific gravity	Metric ton per barrel*		
26	0.898	0.142		
28	0.887	0.140		
30	0.876	0.139		
32	0.865	0.137		
34	0.855	0.135		
36	0.845	0.134		
38	0.835	0.132		
40	0.825	0.130		
42	0.816	0.129		
Note: Approximate figures 60°F. *Interpolate linearly for intermediate APIs.				
				

*This Chart can also be found in the AGI Data Sheets (51.1)

Metric to English*

Known	(symbol)	Multiplier	Product	(symbol)
LENGTH				
micron (=10,000 Angstrom units)	(μ)	3.9370	x 10-s inches	(in or ")
millimeters	(mm)	0.03937	inches	(in or ")
centimeters	(cm)	0.0328	feet	(ft or')
meters	(m)	3.2808	feet	(ft or')
meters	(m)	1.0936	yards	(yd)
kilometers	(km)	0.6214	miles (statute)	(mi)
kilometers	(km)	0.54	nautical miles	(nmi)
AREA				
square centimeters	(cm ²)	0.1550	square inches	(in ²)
square meters	(m ²)	10.7639	square feet	(ft ²)
square meters	(m ²)	1.1960	square yards	(yd ²)
square kiloineters	(km ²)	0.3861	square miles (1 square mile = 640 acres)	(mi ²) (ac)
hectares	(ha)	2.471	acres	(ac)
VOLUME				
cubic centimeters	(cm ³)	0.06102	cubic inches	(in ³)
cubic meters	(m ³)	35.3146	cubic feet	(ft ³)
cubic meters	(m ³)	1.3079	cubic yards	(yd ³)
cubic kilometers	(km ³)	0.2399	cubic miles	(mi ³)
liters (=1000cm ³)	(l)	1.0567	quarts (U.S. liquid)	(qt)
liters	(l)	0.2642	gallons (U.S. liquid)	(gal)
liters	(l)	0.006290	barrels (1 bbl=42 gal)	(bbl)
cubic meters	(m ³)	6.29	barrels	(bbl)
metric tons 32°AP1 (For other densities, see table on next page.)	(MT)	7.28	barrels	(bbl)
cubic meters	(m ³)	0.0008107	acre-feet (=43,560 ft ³ =3.259 x 10 ⁶ gal)	(acre-ft) 10- gal)
MASS				
grams	(g)	5.0000	carats (gems)	(c)
grams	(g)	0.03527	ounces (avdp.)	(oz)
kilograms	(kg)	2.2046	pounds (avdp.)	(lb)
megagrams (= metric tons)	(Mg)	1.1023	short tons (2000 lb)	(us)
megagrams	(Mg)	0.9842	long tons (2240 lb)	(uk)
VOLUME PER UNIT TIME				
cubic meters per second	(m ³ /s)	35.3107	cubic feet per second (=448.83 gal/mm)	(tt3/s)
cubic decimeters per second (liters per second)	(dm ³ /s)	0.03532	cubic feet per second	(ft ³ /s)
liters per second	(l/s)	2.1188	cubic feet per minute	(ft ³ /min)
liters per second	(l/s)	15.8503	gallons per minute	(gal/mm)
liters per second	(l/s)	543.478	barrels per day (petroleum — 1 bbl = 42 gal)	(bbl/d)
PRESSURE				
kilopascal (kPa)		0.1450	pound (force) per square inch (= PSI)	(lb-f/in ²)
(1 Pascal = $\frac{1 \text{ Newton}}{\text{m}^2}$ = $\frac{\text{kg} \cdot \text{in}}{\text{sec}^2 \cdot \text{m}^2}$)		0.009869	atmosphere (= 14.6960 PSI)	(atm)
		0.01	bar (=14.5038 PSI)	
TEMPERATURE				
temperature, degrees Celsius	(°C)	9/5 (then add 32)	temperature, degrees Fahrenheit	(°F)
temperature Kelvin	(K)	9/5 (then subtract 459.67)	temperature, degrees Fahrenheit	(°F)
temperature Kelvin	(K)	subtract 273.15	temperature, degrees Celsius	(°C)
THERMAL GRADIENT				
1°F/100 ft = 1.8°C/100 in = 18°C/km				
CRUDE OIL VOLUME PER BARREL				
Degrees API	Specific gravity	Barrels per metric ton*		
26	0.898	7.02		
28	0.887	7.10		
30	0.876	7.19		
32	0.865	7.28		
34	0.855	7.37		
36	0.845	7.46		
38	0.835	7.55		
40	0.825	7.64		
42	0.816	7.73		
Note: Approximate figures 60°F. *Interpolate linearly for intermediate APIs.				
				

*This Chart can also be found in the AGI Data Sheets (51.3)