



# Reference Material

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## Length

1m=100cm  
1m=1000mm  
1m=10<sup>6</sup> microns  
1cm=2.54in.  
12in=1 foot  
1 foot=0.3048  
3ft=1 yard  
16.5ft=1 rod  
1m=3.2808 ft  
1m=1.0936yd  
1 mile= 1.6094km, 5280 ft  
1 nautical mile= 6076.1 ft  
1 nautical mile= 1852m

## Pressure and Force

1 Newton (N) = 1kg- m/s<sup>2</sup>  
1 dyne = 1 g-cm/s<sup>2</sup>  
1 N = 1x 10<sup>3</sup> dynes  
1 lb = 4.44822 N  
Standard gravity  
Acceleration=9.80665 m/s<sup>2</sup>  
1 N/m<sup>2</sup>=1 pascal (PA)  
1 bar= 103 PA=102 kPa  
1 atmosphere=760mm mercury at 0°C  
1 atmosphere=101,325Pa=1.01325 bars  
1 bar=0.986923 atmospheres  
1 atmosphere=14.6960 lb/in<sup>2</sup>  
1 bar=14.50377 lb/in<sup>2</sup>  
1 lb/in<sup>2</sup>=6894.757 Pa  
1 Pa=1.450377 x 10<sup>-4</sup> lb/in<sup>2</sup>  
1 N/cm<sup>2</sup>=1.450377 lb/in<sup>2</sup>  
27.7 inches of water = 1 PSI

## Volume

1m<sup>3</sup>=1,000,000 cm<sup>3</sup>  
1m<sup>3</sup>=1,000 dm<sup>3</sup> (cubic decimeters)  
1 liter=1 dm<sup>3</sup>=1000cm<sup>3</sup>  
1in<sup>3</sup>=16.3871 cm<sup>3</sup>  
1 liter=61.02374in<sup>3</sup>  
1m<sup>3</sup>=35.3147ft<sup>3</sup>  
1ft<sup>3</sup>=28316.85cm<sup>3</sup>  
1ft<sup>3</sup>=1728in<sup>3</sup>  
1 gas (US)=231in<sup>3</sup>  
1 gas (US)=3.7854 liters  
1ft<sup>3</sup>=7.4805gal (US)  
1 barrel of petroleum=42 gal (US)

## Mass

1kg=1000g  
1 metric ton=1000kg  
1kg=2.2046226lb  
1lb=453.59237g  
1lb=16oz  
1ton=2,000lb  
1ton=907.18474  
1metric ton=2204.6226  
1lb=7,000 grains

## Temperature

°F=1.8 x °C + 32  
°C=(°F-32)/1.8  
R=°F + 459.67  
K=°C + 273.15  
R=K x 1.8  
C=k-273.13

Material thickness from gauge to decimal.

7 gauge= .1793  
10 gauge = .1345  
11 gauge = .1196  
12 gauge = .1046  
13 gauge = .0897

14 gauge = .0747  
16 gauge = .0598  
18 gauge = .0478  
20 gauge = .0359  
22 gauge = .0299

24 gauge = .0239  
26 gauge = .0179  
28 gauge = .014  
30 gauge = .016