

APPENDIX - 4

Some Useful Conversion Factors

Common Units of Mass and Weight

- 1 pound = 453.59 grams**
 1 pound = 453.59 grams = 0.45359 kilogram
 1 kilogram = 1000 grams = 2.205 pounds
 1 gram = 10 decigrams = 100 centigrams
 = 1000 milligrams
 1 gram = 6.022×10^{23} atomic mass units or u
 1 atomic mass units = 1.6606×10^{-24} gram
 1 metric ton = 1000 kilograms
 = 2205 pounds

Common Unit of Volume

- 1 quart = 0.9463 litre**
1 litre = 1.056 quarts
- 1 litre = 1 cubic decimetre = 1000 cubic centimetres = 0.001 cubic metre
 1 millilitre = 1 cubic centimetre = 0.001 litre
 = 1.056×10^{-3} quart
 1 cubic foot = 28.316 litres = 29.902 quarts
 = 7.475 gallons

Common Units of Energy

- 1 joule = 1×10^7 ergs**
 1 thermochemical calorie
 = 4.184 joules
 = 4.184×10^7 ergs
 = 4.129×10^{-2} litre-atmosphere
 = 2.612×10^{-19} electron volts
 1 erg = 1×10^{-7} joule = 2.3901×10^{-8} calorie
 1 electron volt = 1.6022×10^{-19} joule
 = 1.6022×10^{-12} erg
 = 96.487 kJ/mol

- 1 litre-atmosphere = 24.217 calories
 = 101.32 joules
 = 1.0132×10^9 ergs
 1 British Thermal Unit = 1055.06 joules
 = 1.05506×10^{10} ergs
 = 252.2 calories

Common Units of Length

- 1 inch = 2.54 centimetres (exactly)**
 1 mile = 5280 feet = 1.609 kilometres
 1 yard = 36 inches = 0.9144 metre
 1 metre = 100 centimetres = 39.37 inches
 = 3.281 feet
 = 1.094 yards
 1 kilometre = 1000 metres = 1094 yards
 = 0.6215 mile
 1 angstrom = 1.0×10^{-8} centimetre
 = 0.10 nanometre
 = 1.0×10^{-10} metre
 = 3.937×10^{-9} inch

Common Units of Force* and Pressure

- 1 atmosphere = 760 millimetres of mercury
 = 1.013×10^5 pascal
 = 14.70 pounds per square inch
 1 bar = 10^5 pascals
 1 torr = 1 millimetre of mercury
 1 pascal = $1 \text{ kg/ms}^2 = 1 \text{ N/m}^2$

Temperature SI Base Unit: Kelvin (K)

- K = -273.15°C
 K = $^\circ\text{C} + 273.15$
 $^\circ\text{F} = 1.8(^\circ\text{C}) + 32$