

Temperature

Celcius + 273 = Kelvin

Kelvin – 273 = Celcius

Degrees Kelvin are a direct measure of the Kinetic energy of a system. If the degrees Kelvin of a system doubles, the Kinetic Energy of the system also doubles

Pressure

Pressure is defined as the force exerted on a unit area of surface

$$\text{pressure} = \frac{\text{force}}{\text{area}} \quad \text{or} \quad P = \frac{F}{A}$$

The units of pressure will depend on the units used for force and area

There are three main measures of pressure

mm Hg – mercury barometers caused pressure to be measured in millimetres of mercury

atmospheres – (where as normal atmospheric pressure or 760 mmHg = 1 atmosphere)

Pascals (orNm²) – the SI unit for force is the Newton and of area is m²

the relationship between these is

$$1 \text{ atm} = 760 \text{ mmHg}$$

$$1 \text{ atm} = 101,325 \text{ Pa (or} 101.325 \text{ kPa)}$$

$$\text{atm to mm Hg} \quad \text{mm Hg} = \text{atm} \times 760$$

$$\text{mm Hg to atm} \quad \text{atm} = \frac{\text{mmHg}}{760}$$

$$\text{atm to kPa} \quad \text{kPa} = \text{atm} \times 101.325$$

$$\text{kPa to atm} \quad \text{atm} = \frac{\text{kPa}}{101.325}$$

$$\text{kPa to mm Hg} \quad \text{mm Hg} = \frac{101.325 \times \text{kPa}}{760}$$

$$\text{mm Hg to kPa} \quad \text{kPa} = \frac{760 \times \text{mmHg}}{101.325}$$

Volume

$$1 \text{ m}^3 = 1000 \text{ dm}^3$$

$$1 \text{ dm}^3 = 1000 \text{ cm}^3 = 1 \text{ litre}$$

$$1 \text{ m}^3 = 1000000 \text{ cm}^3$$

$$1 \text{ ml} = 1 \text{ cm}^3$$

$$1 \text{ litre} = 1000 \text{ ml}$$

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