

SI units and useful equations

Quantity	SI Unit	Other Unit
length	metre (m)	
area		square metre (m ²)
volume		cubic metre (m ³)
mass	kilogram (kg)	
time	second (s)	
temperature	kelvin (K)	
velocity		m/s
acceleration		m/s ²
force	newton (N)	kg m/s ²
energy or work done	joule (J)	kg m ² /s ²
power	watt (W)	J/s
pressure	pascal (Pa)	N/m ²
frequency	hertz (Hz)	
resistance	ohm (Ω)	
electric current	ampere (A)	
potential difference	volt (V)	

Useful Equations

$$a = \frac{v-u}{t}$$

a = acceleration (m/s²)
 u = initial velocity (m/s)
 v = velocity (m/s) at a time t (s)

$$v = \frac{s}{t}$$

v = velocity (m/s)
 s = distance (m)
 t = time (s)

$$F = ma$$

F = force (N)
 m = mass (kg)
 a = acceleration (m/s²)

$$W = Fs$$

W = energy or work done (J)
 F = force (N)
 s = distance (m)

For a fixed mass of gas:

$$\frac{pV}{T} = \text{constant}$$

p = pressure (Pa)
 V = volume (m³)
 T = temperature (K)

$$p = \frac{F}{A}$$

p = pressure (Pa)
 F = force (N)
 A = area (m²)

$$P = \frac{W}{t}$$

P = power (w)
 W = work done (J)
 t = time taken (s)

$$v = f\lambda$$

v = velocity (m/s)
 f = frequency (Hz)
 λ = wavelength (m)

Ohm's Law V = potential difference (V)
 R = resistance (Ω)
 I = current (A)



$$I = \frac{V}{R} \quad R = \frac{V}{I} \quad V = I R$$