

## Tolerance

Tolerance describes a range of values.

Example:

A 30ml bottle of perfume has a tolerance of  $(30 \pm 0.5)$ ml.  
State the maximum and minimum acceptable volumes.

Maximum volume  $(30 + 0.5)$ ml = 30.5 ml

Minimum volume  $(30 - 0.5)$ ml = 29.5 ml

Example:

A pipe is required to have a given width between  
9.96mm to 10.00mm. Write this in tolerance

Difference between maximum and minimum is  $10.00 - 9.96 = 0.04$   
mm

Half of 0.04mm is 0.02mm.

So the middle value is  $9.96 + 0.2 = 9.98$ mm

Width of pipe:  $(9.98 \pm 0.02)$ mm