

The Mole

1
$$\text{Number of moles} = \frac{\text{number of particles}}{6.02 \times 10^{23}}$$

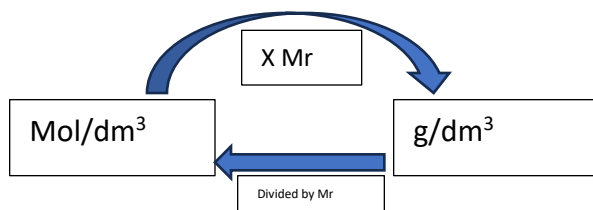
← For all particles including atoms, molecules, ions

2
$$\text{Number of moles} = \frac{\text{mass (gram)}}{\text{molar mass in g/mol}}$$

← For all substances including solid, liquid, gas

3
$$\text{Number of moles} = \text{volume (dm}^3\text{)} \times \text{concentration (mol/dm}^3\text{)}$$

← For solution only!!!



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

$$1 \text{ tonne} = 1000\text{kg} = 1000000\text{g}$$

4
$$\text{Number of moles} = \frac{\text{volume (unit: dm}^3\text{)}}{24}$$

← For gas only!!! → For gases, the mole ratio is the same as volume ratio

5
$$\text{Yield\%} = \frac{\text{actual yield}}{\text{Theoretical yield}} \times 100\%$$

Obtained from mole calculation

6
$$\text{Purity\%} = \frac{\text{mass of pure substance}}{\text{Mass of impure sample}} \times 100\%$$