

Mole Calculations

You will need to use the following.

Number of moles (n) = mass (m)

Mr

Concentration (C or M) = number of moles (n)

Volume (V)

1 mole is 6.02×10^{23} (exactly as how 1 dozen is 12).

1 mole of any gas takes up 24 dm^3 at standard condition ($25 \text{ }^\circ\text{C}$ and 1 bar).

1. Write pyramids for the two equations
2. How many moles are there in 23 g of ^{23}Na ?
3. i) How many atoms are there in 1 mole? ii) How many atoms are there in 0.5 moles?
4. How many moles are there in 120 g of Calcium?
5. What is the mass of 2 moles of ^{238}U ?
6. What is the volume of 5 moles of $\text{He}_{(g)}$?
7. A gas has a volume of 120 dm^3 , how many moles is this?
8. What is the Mr of a substance where 1 mole has a mass of 11 g?
9. What is the concentration of a solution with 2 moles dissolved in 1 dm^3 ?
10. What would the concentration be if 3 moles were dissolved in 3 dm^3 ?