Measurement of Matter

Chapter 4: Measurement of Matter · Topic 1

Key Concept

The mole is a unit representing 6.022×10^{23} particles (Avogadro's number), whether atoms, molecules, or ions of a substance.

Molar mass is the mass of one mole of a substance in grams, numerically equal to its atomic or molecular mass.

The number of moles can be calculated by dividing the given mass by the molar mass (n=mass/molar mass).

Understanding mole concept and related calculations is essential for balancing chemical equations and stoichiometric calculations.

Quick Revision Notes

- Mole: 6.022×10^{23} particles (Avogadro's number).
- Molar mass: mass of 1 mole in grams.
- Equals atomic/molecular mass numerically.
- Moles = mass ÷ molar mass.
- This calculates the number of moles.
- Essential for balancing chemical equations.
- Also for stoichiometric calculations.
- Practice builds calculation skills.

Practice Questions

1. Calculate the number of moles in 36g of water.
2. Calculate the mass of 3 moles of carbon.
3. Discuss the significance of Avogadro's number.
4. Solve a mole concept word problem.
5. Explain the mole concept in your own words.
6. Discuss how moles relate to chemical equations.