

Elements and Compounds

Chapter 8: Nature of Matter: Elements, Compounds, and Mixtures · Topic 1

Key Concept

Compounds have properties completely different from the elements that form them — for example, hydrogen and oxygen are both gases, but when they chemically combine, they form water, a liquid with entirely different properties. This is a key difference from mixtures, where the combined substances keep their individual properties. Elements are represented by chemical symbols (like H for hydrogen, O for oxygen), while compounds are represented by chemical formulas showing the ratio of elements present (like H_2O for water).

Quick Revision Notes

- An element is a pure substance made of only one type of atom (e.g., oxygen, iron).
- A compound forms when elements chemically combine in a fixed ratio (e.g., water, salt).
- Compounds have properties different from their constituent elements.
- Elements use chemical symbols (H, O); compounds use chemical formulas (H_2O).

Practice Questions

- 1 Name two elements and one compound.
- 2 Explain why water's properties differ from those of hydrogen and oxygen gas.
- 3 What is the key difference between how elements combine to form a compound versus a mixture?