

Composition of Matter

Chapter 6: Composition of Matter · Topic 1

Key Concept

An element is a pure substance made of only one type of atom, like oxygen, gold, or hydrogen, and cannot be broken down further chemically.

A compound is formed when two or more elements chemically combine in fixed proportions, like water (H₂O) or carbon dioxide (CO₂).

A mixture is a combination of two or more substances that are physically combined, not chemically bonded, like sand and water.

Mixtures can be homogeneous (uniform throughout, like saltwater) or heterogeneous (non-uniform, like a salad), unlike compounds with fixed composition.

Quick Revision Notes

- Element: pure substance, one atom type.
- Examples: oxygen, gold, hydrogen.
- Compound: elements chemically combined.
- Fixed proportions. Examples: water, CO₂.
- Mixture: physically combined substances.
- Not chemically bonded.
- Homogeneous mixture: uniform (saltwater).
- Heterogeneous mixture: non-uniform (salad).

Practice Questions

- 1 Classify five substances as elements, compounds, or mixtures.
- 2 Discuss the difference between a compound and mixture.
- 3 Give an example of a homogeneous mixture.
- 4 Give an example of a heterogeneous mixture.
- 5 Research how water is a compound.
- 6 Explain elements, compounds and mixtures in your own words.