

Separating the Components of a Mixture

Chapter 2: Is Matter Around Us Pure? · Topic 2

Key Concept

Chromatography is particularly useful for separating mixtures of similar substances, like different pigments in ink, where components move at different rates through a paper strip based on their solubility and how strongly they bind to the paper — this is widely used in forensic science and to test for purity of substances. Simple distillation separates liquids with significantly different boiling points, while fractional distillation is used for liquids with closer boiling points, such as separating components of crude oil.

Quick Revision Notes

- Separation methods: filtration, evaporation/crystallisation, distillation, sublimation, chromatography.
- Chromatography separates substances based on differing solubility and movement through a medium.
- Simple distillation separates liquids with very different boiling points.
- Fractional distillation separates liquids with closer boiling points, like components of crude oil.

Practice Questions

- 1 Which technique would you use to separate a mixture of sand and salt dissolved in water?
- 2 Explain how chromatography separates different pigments in ink.
- 3 Why is fractional distillation, rather than simple distillation, used to separate crude oil into its components?