

Separation by Evaporation and Condensation

Chapter 9: Methods of Separation in Everyday Life · Topic 3

Key Concept

Distillation is especially useful when we want to recover BOTH components of a mixture in pure form, unlike simple evaporation which only leaves behind the solid while the liquid escapes into the air unused. This principle is used on a large scale to convert seawater into fresh drinking water in regions with water scarcity, and is also used to purify substances in chemical laboratories and industries, including in the production of items like perfumes and alcoholic beverages.

Quick Revision Notes

- Heating saltwater evaporates the water, leaving the dissolved salt behind.
- Cooling water vapour causes it to condense back into liquid water.
- Distillation combines evaporation and condensation to recover both components of a mixture.
- Large-scale distillation is used to convert seawater into fresh drinking water.

Practice Questions

- 1 Explain how you would recover salt from a salt-water solution.
- 2 Describe the process of distillation and why it is more useful than simple evaporation in some cases.
- 3 Name one industry that uses distillation.