C2.1.7 Purification and Checking Purity

Previous knowledge

Solute – substance that dissolves

Solvent – liquid that dissolves another substance

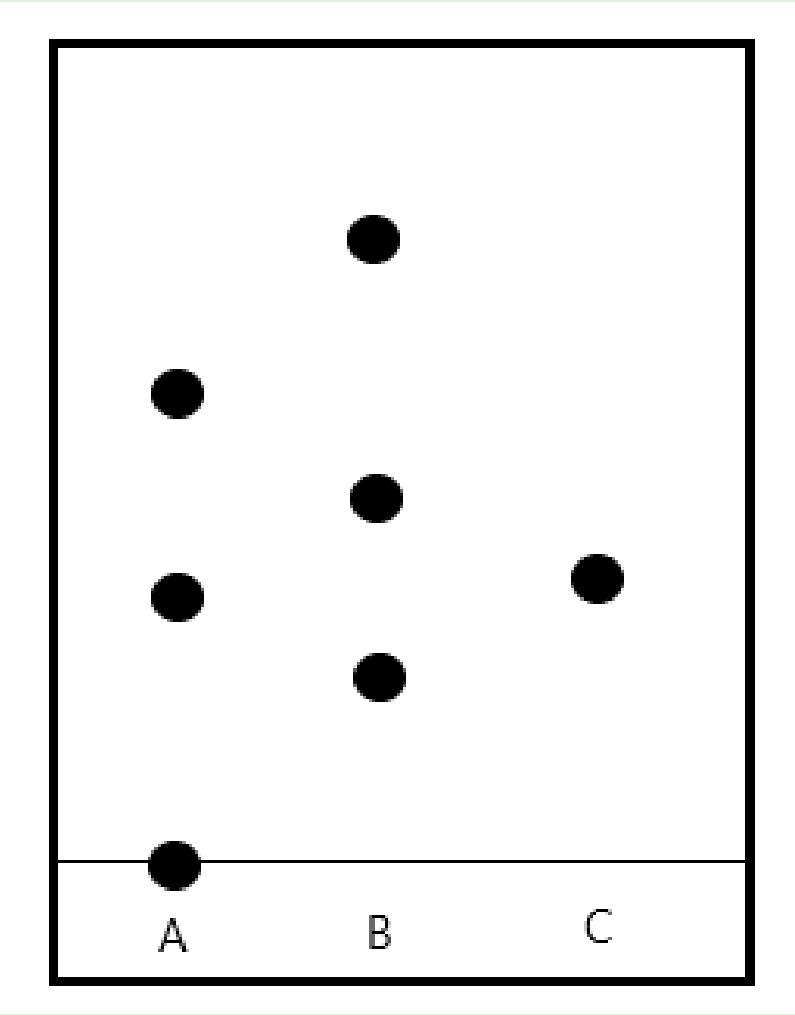
Learning Objectives

- Describe how to check whether a substance is pure or not
- Describe how to separate different mixtures
- Choose a method to separate different mixtures

How do we check if a substance is pure or not?

- Melting point
  - Same as literature value
  - Sharp melting point
- Paper or thin-layer chromatography
  - One spot only
- Gas chromatography
  - One peak only

Paper or thin-layer chromatography

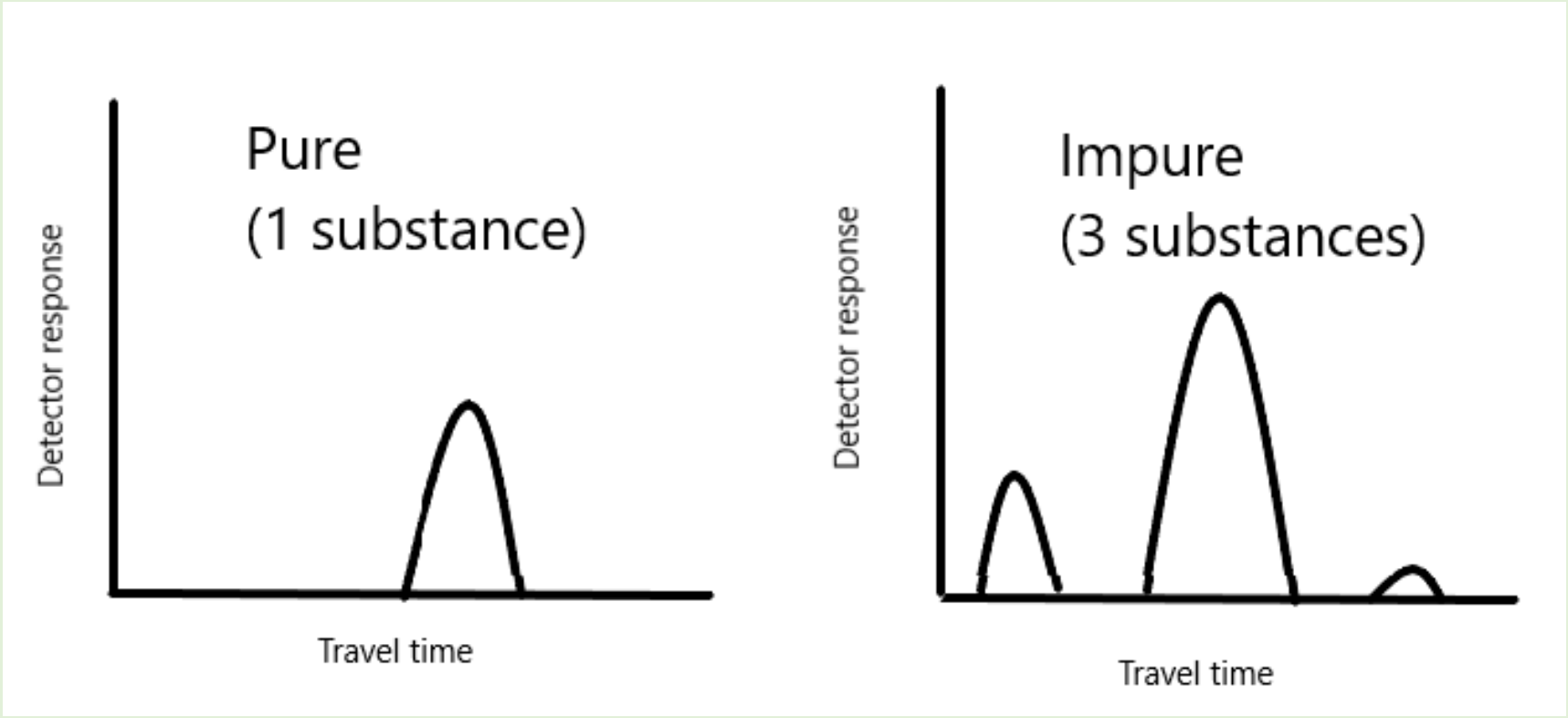


A contains 3 different substances (one is insoluble)

B contains 3 different substances

C is pure (only one substance)

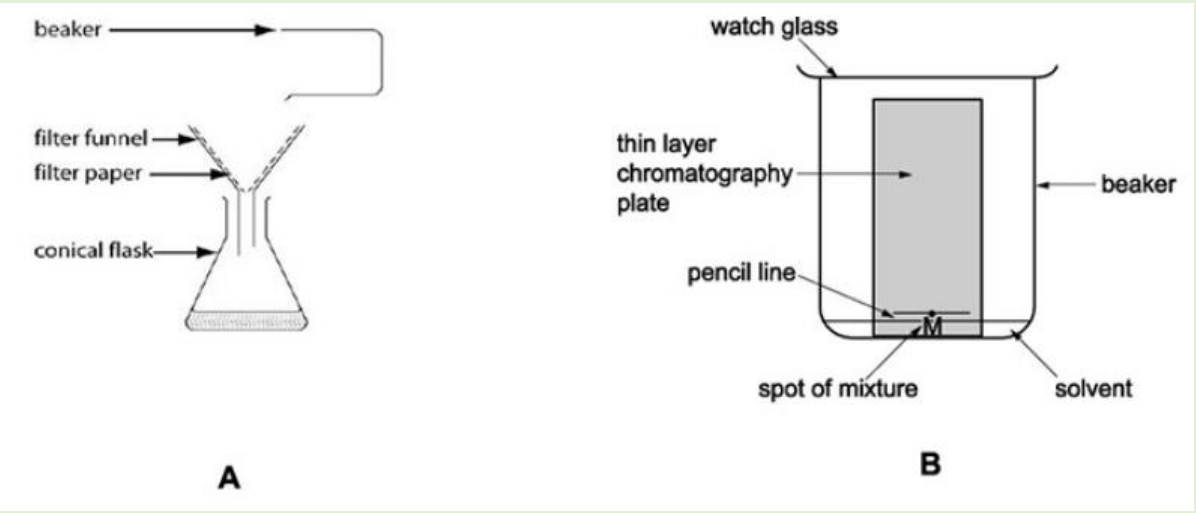
Gas Chromatography

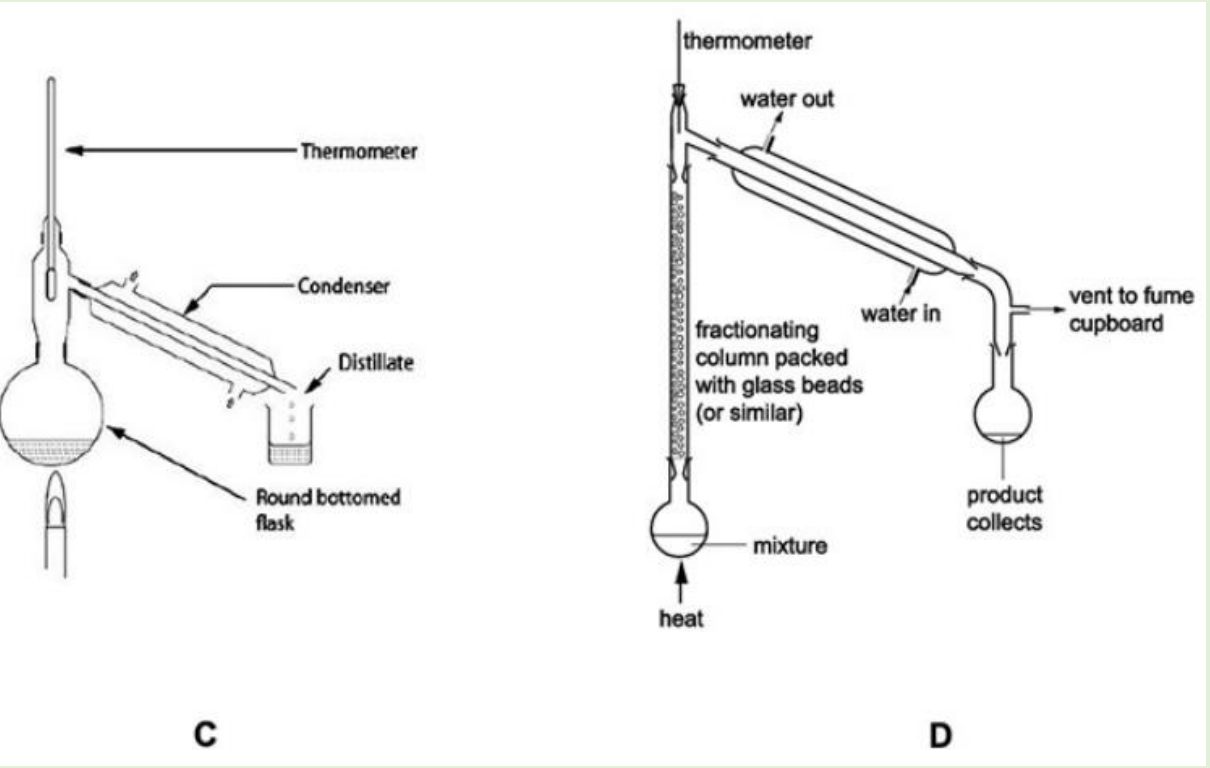


Separating Mixtures – which method do we choose?

Mixture	Example	Method
An insoluble substance and a soluble substance	Sand (insoluble) and salt (soluble)	Dissolving then filtration
Two soluble substances	Pen ink	Paper or thin layer chromatography
Two liquids	Water and ethanol	Fractional distillation
A solution (mixture of solute and solvent)	Salt dissolved in water	Simple distillation to recover the pure solvent Crystallisation to recover the pure solute

Answer the multiple choice questions





1. Name the techniques A, B, C and D

2. Which technique would you use to separate sugar and chalk?

3. Which technique could be used to check purity?