

7.3 Preparation of salts

Name: _____ Class: _____ Date: _____

Total: 10 marks

Objective

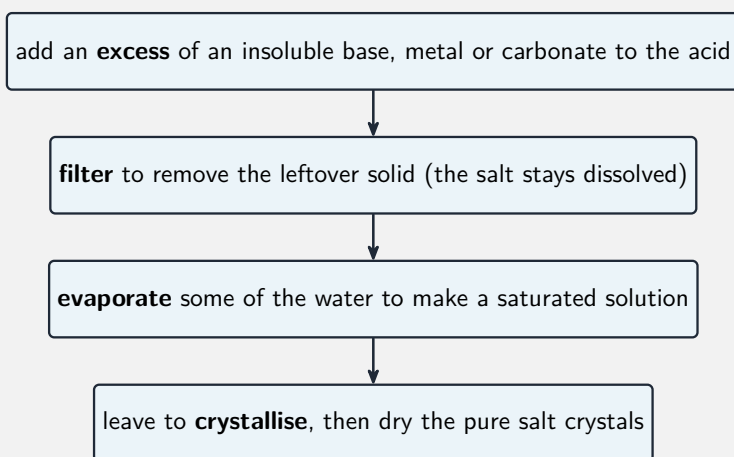
Build the skills to answer exam questions on the **preparation of salts** 盐的制备—**solubility rules** 溶解性规则, making **soluble salts** 可溶盐, and making **insoluble salts** 不溶盐 by **precipitation** 沉淀.

You must be able to:

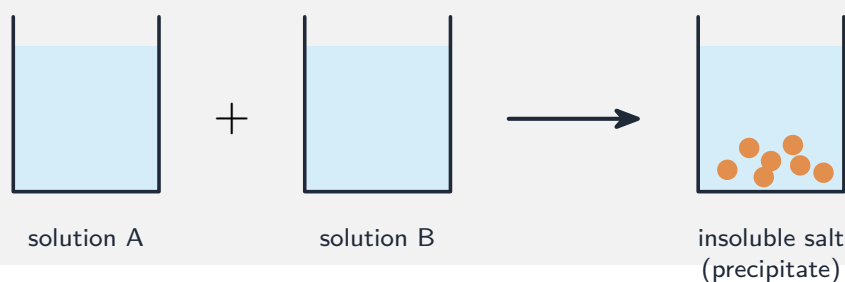
- use the solubility rules
- describe making a soluble salt (excess solid, filter, evaporate, crystallise)
- describe making an insoluble salt by precipitation

1 Worked examples

■ Two salt-making routes



Soluble salt from an insoluble solid: react with excess, filter, evaporate, crystallise



Insoluble salt: mix two solutions each carrying one needed ion → filter, wash, dry

- **soluble:** all Na/K/ammonium and nitrates; most chlorides/sulfates.

2 Practice

2.1 State whether silver chloride is soluble or insoluble. [1]

2.2 Name the method used to make an insoluble salt. [1]

3 Exam-style questions

3.1 A soluble salt is best made from an acid and an **excess** of an insoluble base by, in order: [1]

- **A** filter, react, crystallise
 - **B** react, filter, evaporate, crystallise
 - **C** evaporate, react, filter
 - **D** precipitate, wash, dry
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3.2 Describe how to make pure, dry copper(II) sulfate crystals from copper(II) oxide and dilute sulfuric acid. [4]

3.3 Barium sulfate is insoluble. Name two solutions that could be mixed to make it, and state what you would do after mixing. [3]

4 Go further

You are now ready for the real exam questions on this subtopic. Open the **7.3 Preparation of salts** past-paper sheet in the Library, or try these in **Practice mode**:

- 0620/21 N25 —Q21 (salt preparation)
- 0620/22 N25 —Q20 (solubility / salts)

Solutions

2.1 insoluble.

2.2 precipitation.

3.1 B. React (excess base), filter off the excess, evaporate, then crystallise.

3.2 add excess copper(II) oxide to warm dilute sulfuric acid until no more reacts; filter to remove the excess solid; evaporate some water from the filtrate; leave to crystallise, then dry the crystals.

3.3 mix a solution of a soluble barium salt (e.g. barium chloride) with a soluble sulfate (e.g. sodium sulfate); then filter, wash and dry the precipitate.