

(Soluble salts (practical preparation))

Q1.(2018)

Describe a method to make pure, dry crystals of magnesium sulfate from a metal oxide and a dilute acid.

[6 marks]

Q2. (2020)

Name the salt with the formula MgBr_2

[1 mark]

Q3. (2020)

The student purified the separated silver iodide.

This is the method used.

1. Rinse the silver iodide with distilled water.
2. Warm the silver iodide.

Suggest **one** impurity that was removed by rinsing with water.

[1 mark]

Q4. (2020)

Suggest why the student warmed the silver iodide.

[1 mark]

Q5.(2023)

This question is about making a soluble salt.

Plan a method to make pure, dry crystals of zinc chloride from zinc carbonate and a dilute acid.

[6 marks]

Q6.a)(2024)

A student produced a salt by reacting copper carbonate with sulfuric acid.

This is the method used.

1. Measure 50 cm³ of sulfuric acid into a beaker.
2. Add copper carbonate powder.
3. Stir the mixture.
4. Repeat steps 2 and 3 until copper carbonate is in excess.
5. Filter the mixture.
6. Warm the filtrate gently until crystals start to appear.
7. Leave the solution to cool and crystallise.

Complete the word equation for the reaction.

[2 marks]

copper carbonate + sulfuric acid → _____ + _____ + carbon dioxide

Q6.b)(2024)

Give **one** observation the student could make during **Step 4** which shows that the copper carbonate is in excess.

[1 mark]

Q6.c)(2024)

Give **one** reason for filtering the mixture in **Step 5**.

[1 mark]

Q6.d)(2024)

Name the equipment that can be used to warm the filtrate **gently** in **Step 6**.

[1 mark]

Q6.e)(2024)

The maximum theoretical mass of the salt that could be produced using 50 cm³ of the sulfuric acid is 12.5 g.

The percentage yield of the salt is 92.8%.

Calculate the mass of salt actually produced.

Use the equation:

$$\% \text{ yield} = \frac{\text{mass of salt actually produced}}{\text{maximum theoretical mass of salt that could be produced}} \times 100$$

[3 marks]

Mass of salt actually produced = _____ g

Q6.f)(2024)

Some salts can be produced by reacting sulfuric acid with a metal.

Neither copper nor sodium is used to produce a salt with sulfuric acid.

Give **one** reason why each metal is **not** used.

[2 marks]

Copper _____

Sodium _____
