

# **AQA Chemistry GCSE**

## Required Practical 1 - Making Salts Mark Scheme

Q1 (a) any one from:

- Heat
- stir

(1)

(b) filter

accept use a centrifuge

accept leave longer (to settle)

(1)

(c) any one from:

- wear safety spectacles
- wear an apron

(1)

(d) evaporation at A

(1)

condensation at B

(1)

(e) 100

(1)

Q2. effervescence / bubbling / fizzing / bubbles of gas

Do not accept just gas alone

(1)

Magnesium gets smaller / disappears

Allow magnesium dissolves

Allow gets hotter

Or steam produced

*Ignore references to magnesium moving and floating / sinking and incorrectly named gases.*

(1)

(ii) Marks awarded for this answer will be determined by the Quality of Communication (QC) as well as the standard of the scientific response. Examiners should also refer to the information in the Marking Guidance and apply a 'best-fit' approach to the marking.

0 marks - No relevant content

Level 1 (1–2 marks) - There are simple statements of some of the steps in a procedure for obtaining magnesium chloride.

Level 2 (3–4 marks) - There is a description of a laboratory procedure for obtaining magnesium chloride from dilute hydrochloric acid and magnesium. The answer must include a way of ensuring the hydrochloric acid is fully reacted or a method of obtaining magnesium chloride crystals.

Level 3 (5–6 marks) - There is a well organised description of a laboratory procedure for obtaining magnesium chloride that can be followed by another person. The answer must include a way of ensuring the hydrochloric acid is fully reacted and a method of obtaining magnesium chloride crystals

Examples of the points made in the response:

- hydrochloric acid in beaker (or similar)
- add small pieces of magnesium ribbon
- until magnesium is in excess or until no more effervescence occurs \*
- filter using filter paper and funnel
- filter excess magnesium
- pour solution into evaporating basin / dish
- heat using Bunsen burner
- leave to crystallise / leave for water to evaporate / boil off water
- decant solution
- pat dry (using filter paper).

\*Student may choose to use a named indicator until it turns a neutral colour, record the number of pieces of magnesium added then repeat without the indicator.

(6)

Q3. Level 3 (5–6 marks):

A coherent method is described with relevant detail, and in correct sequence which demonstrates a broad understanding of the relevant scientific techniques and procedures. The steps in the method are logically ordered. The method would lead to the production of valid results.

Level 2 (3–4 marks):

The bulk of the method is described with mostly relevant detail, which demonstrates a reasonable understanding of the relevant scientific techniques and procedures. The method may not be in a completely logical sequence and may be missing some detail.

Level 1 (1–2 marks):

Simple statements are made which demonstrate some understanding of some of the relevant scientific techniques and procedures. The response may lack a logical structure and would not lead to the production of valid results.

0 marks: No relevant content.

### Indicative content

- sulfuric acid in beaker (or similar)
- add copper carbonate one spatula at a time
- until copper carbonate is in excess or until no more effervescence occurs \*
- filter using filter paper and funnel
- filter excess copper carbonate
- pour solution into evaporating basin / dish
- heat using Bunsen burner
- leave to crystallise / leave for water to evaporate / boil off water
- decant solution
- pat dry (using filter paper)
- wear safety spectacles / goggles

\*Students. may choose to use a named indicator until it turns a neutral colour, record the number of spatulas of copper carbonate added then repeat without the indicator.

### Q4

- (a) Marks awarded for this answer will be determined by the Quality of Written Communication (QWC) as well as the standard of the scientific response. Examiners should also apply a **best-fit** approach to the marking.

#### **0 marks**

No relevant content.

#### **Level 1 (1-2 marks)**

There is a simple description of a laboratory procedure for obtaining potassium chloride.

#### **Level 2 (3-4 marks)**

There is a clear description of a laboratory procedure for obtaining potassium chloride from potassium hydroxide solution and hydrochloric acid that does not necessarily allow the procedure to be completed successfully by another person. The answer must include the use of an indicator or a method of obtaining crystals.

#### **Level 3 (5-6 marks)**

There is a detailed description of a laboratory procedure for obtaining potassium chloride from potassium hydroxide solution and hydrochloric acid that can be followed by another person. The answer must include the use of an indicator and a method of obtaining crystals.

**examples of the chemistry/social points made in the response:**

- One reagent in beaker (or similar)
- Add (any named) indicator
- Add other reagent
- Swirl or mix
- Add dropwise near end point
- Stop addition at change of indicator colour
- Note volume of reagent added
- Repeat without indicator, adding same volume of reagent **or** remove indicator using charcoal
- Pour solution into basin / dish
- Heat (using Bunsen burner)
- Leave to crystallise / leave for water to evaporate / boil off water

**Accept** any answers based on titration