

Required Practical Identifying Ions

GCSE Chemistry · Written to the shared content for AQA, Edexcel and OCR

Name _____ Class _____ Date _____

1. Worked example

Unknown A gives a lilac flame and a cream precipitate with nitric acid and silver nitrate. Identify A. (2 marks)

Step 1 · Cation

Lilac flame → potassium ion, K^+ .

Step 2 · Anion

Cream precipitate with silver nitrate → bromide ion, Br^- .

Answer: Potassium bromide, KBr

Check: One mark for each ion.

2. Now try one with the steps

Describe how to test a solution for metal ions using sodium hydroxide. (3 marks)

Step 1 · Volume

Step 2 · Add

Step 3 · Excess

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Explain why the flame test wire is cleaned before each test. [1]

2. State why a blue (roaring) Bunsen flame is used for flame tests. [1]

3. Explain why sodium hydroxide is added a few drops at a time. [1]

4. A student gets a yellow flame for every sample. Suggest why. [1]
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5. Unknown A: lilac flame; cream precipitate with nitric acid and silver nitrate. Identify A. [2]
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6. Unknown B: green precipitate with sodium hydroxide; white precipitate with hydrochloric acid and barium chloride. Identify B. [2]
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7. Unknown C: orange-red flame; fizzes with dilute acid and the gas turns limewater milky. Identify C. [2]
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8. Unknown D: white precipitate with sodium hydroxide that dissolves in excess; white precipitate with nitric acid and silver nitrate. Identify D. [2]
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9. Give one hazard of barium chloride solution and a precaution. [2]
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10. Give one hazard of silver nitrate solution. [1]
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11. Explain why the anion tests are carried out on a solution of the sample. [1]
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12. Explain why small volumes (about 1 cm³) are used in these tests. [1]
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13. Write the ionic equation for the test that identifies chloride ions. [1]
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14. Explain why both a cation test and an anion test are needed to identify an ionic compound. [1]
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4. Before you hand it in

Adding lots of sodium hydroxide at once

Add a few drops, observe, then add excess.

Doing the sulfate test after the halide test in the same tube

Use a fresh sample for each test.

Naming only one ion

Give both ions or the full name, e.g. potassium bromide.