

Required Practical Titration

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

Name _____ Class _____ Date _____

1. Worked example

Name the apparatus used to measure exactly 25.0 cm³ of sodium hydroxide solution and to add the acid. (2 marks)

Step 1 · Fixed volume of alkali

A 25.0 cm³ volumetric pipette with a pipette filler.

Step 2 · Variable volume of acid

A burette, read to the nearest 0.05 cm³.

Answer: Pipette (alkali) and burette (acid)

Check: Measuring cylinders are not accurate enough for titration.

2. Now try one with the steps

The burette reads 1.00 cm³ at the start and 23.10 cm³ at the end. Calculate the titre. (1 mark)

Step 1 · Titre = final – initial

Answer:

3. Practice

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

1. Name the apparatus used to measure exactly 25.0 cm³ of alkali. [1]

2. Name the apparatus used to add acid in small, measured amounts. [1]

3. Name a suitable indicator for an acid–alkali titration and give its colour change when acid is added to alkali. [2]

4. Explain why universal indicator is not used in titrations. [1]

5. State why the conical flask is placed on a white tile. [1]
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6. A burette reads 0.50 cm^3 at the start and 23.10 cm^3 at the end. Calculate the titre in cm^3 . [1]
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7. Explain why the flask is swirled during the titration. [1]
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8. Explain why the acid is added drop by drop near the end point. [1]
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9. State the purpose of a rough titration. [1]
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10. Describe how to read a burette correctly. [2]
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11. Explain why the burette is rinsed with the acid before filling it. [1]
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12. Titres of 22.15 , 22.10 and 22.20 cm^3 are concordant. Calculate the mean titre in cm^3 . [1]
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13. 25.0 cm^3 of 0.100 mol/dm^3 NaOH is neutralised by a mean titre of 22.15 cm^3 of HCl. Calculate the concentration of the acid in mol/dm^3 to 3 significant figures. [3]
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14. Describe how the titration results could be used to make a pure sample of sodium chloride. [2]
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4. Before you hand it in

Reading the top of the meniscus

Read the bottom of the meniscus at eye level.

Using a measuring cylinder for the alkali

Use a volumetric pipette and filler.

Averaging all titres including the rough

Average only concordant titres (within 0.10 cm^3).