Edexcel Chemistry A-Level

Core Practical 03 - Titration

Flashcards

What is a standard solution?

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A standard solution is a solution of known concentration.

How do you make a diluted solution of hydrochloric acid?

How do you make a diluted solution of hydrochloric acid?

- Add 25 cm^3 of the hydrochloric acid solution into the volumetric flask using a pipette.
- Make the solution up to the line by adding distilled water.

What equipment is used to carry out a titration?

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- A pipette and pipette filler are used to accurately measure out the volume of a reactant before transferring it to a conical flask.
- A burette is a controlled way to add small volumes of one reactant to the other reactant (until the reaction has reached completion).

How do you carry out this titration?

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- Once the pipette has been used to place HCl into the conical flask, fill the burette with NaOH (known concentration). Record initial volume.
- Add a few drops of phenolphthalein indicator to the conical flask.
- Open the burette tap and allow the NaOH to flow into the conical flask, swirling it to mix the contents.
- Close the burette tap once the expected colour change occurs (Colourless to pink). Use a white tile so the colour change is easy to identify.
- Record final burette volume.
- Repeat until you get concordant results, then calculate a mean titre.

Why are acid-base indicators used?

Why are acid-base indicators used?

To detect when a reaction reaches completion, usually by the presence of a colour change.

What are concordant results?

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Titres that are within 0.1 cm^3 of each other.

How would you analyse the results from this titration?

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- Calculate the mean titre using concordant results.
- Calculate the number of moles of NaOH in the mean titre (n = c x v).
- Calculate the number of moles of HCl that were present in the 250 cm^3 diluted solution.
- Use this to calculate the concentration of the original solution of HCl.

What are some potential hazards and risks in the laboratory?

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Hazard	Risk	Control
Chemicals I.e. Phenolphthalein and hydrochloric acid	- May be an irritant or corrosive, causing irritation to skin, eyes, lungs. - May be toxic - May be Flammable.	Handle with care and while wearing gloves. Wear eye protection. Keep away from the edge of the desk and from an open flame. Don't ingest.
Glassware i.e beakers, test tubes.	May break and cut you.	Handle with care. Keep away from edge of the desk.