WJEC (Eduqas) Chemistry A-level

SP C2.1a - Preparation of a Soluble Salt by Titration

Flashcards

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What apparatus is required to prepare a salt by titration?

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What apparatus is required to prepare a salt by titration?

- 50 cm^3 burette
- 25 cm^3 pipette and filler
- Conical flasks
- Funnel
- Evaporating basin

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What is a suitable indicator to use in a titration between HCl and NaOH?

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What is a suitable indicator to use in a titration between HCl and NaOH?

Phenolphthalein

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What is the colour change of phenolphthalein and at what pH does the colour change occur?

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What is the colour change of phenolphthalein and at what pH does the colour change occur?

- Colourless in acid
- Pink in alkali

Phenolphthalein will change colour in the pH range 8.3-10.

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What are the hazards associated with HCl, NaOH and phenolphthalein?

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What are the hazards associated with HCl, NaOH and phenolphthalein?

HCl - irritant

NaOH - irritant

Phenolphthalein - flammable

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Describe how to prepare a salt by a titration between NaOH and HCl

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Describe how to prepare a salt by a titration between NaOH and HCl

1. Using a pipette, measure 25cm^3 of NaOH and pour it into a conical flask.
2. Add two drops of phenolphthalein.
3. Pour the HCl into a burette and record the initial volume.
4. Add the HCl from the burette into the conical flask a little at the time while swirling the flask.
5. When the phenolphthalein starts to turn from pink to colourless, add the HCl solution a drop at a time until one drop is sufficient to turn the solution colourless.
6. Record the volume of HCl solution added.
7. Carry out the titration again using 25cm^3 of NaOH solution and exactly the same volume of HCl.
8. Do not add the indicator this time.
9. Heat the solution from the conical flask in an evaporating basin until its volume decreases by half.
10. Let the evaporating basin cool so that crystals form.

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What is the chemical equation for the reaction between NaOH and HCl?

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What is the chemical equation for the reaction between NaOH and HCl?

$$HCl + NaOH \rightarrow NaCl + H_2O$$

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What type of reaction takes place between HCl and NaOH?

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What type of reaction takes place between HCl and NaOH?

Neutralisation

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Why should the burette be filled below eye level?

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Why should the burette be filled below eye level?

The burette should be filled below eye level so that if any of the acid spills whilst being poured in, it will not splash into your face.

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Why is the titration repeated without the indicator?

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Why is the titration repeated without the indicator?

This ensures that the salt produced in the repeated titration will not be contaminated with phenolphthalein.

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Why are titrations usually carried out on a white tile?

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Why are titrations usually carried out on a white tile?

The white tile allows the point of colour change to be easily identified.

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How can you calculate how much HCl was required to neutralise the NaOH?

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How can you calculate how much HCl was required to neutralise the NaOH?

Volume of HCl =

Initial burette reading - final burette reading

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Why is the NaOH placed in a conical flask?

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Why is the NaOH placed in a conical flask?

The conical flask allows the mixture to be swirled without losing any of the contents.

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Why must the reaction mixture be swirled during the titration?

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Why must the reaction mixture be swirled during the titration?

Swirling ensures all the reacting particles collide and react. This helps to give a more accurate end point for the reaction.

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Why are burettes and pipettes always used in titrations?

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Why are burettes and pipettes always used in titrations?

Burettes and pipettes measure the volumes of solutions very precisely.

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