

AS and A-level Chemistry practicals: Equipment set up

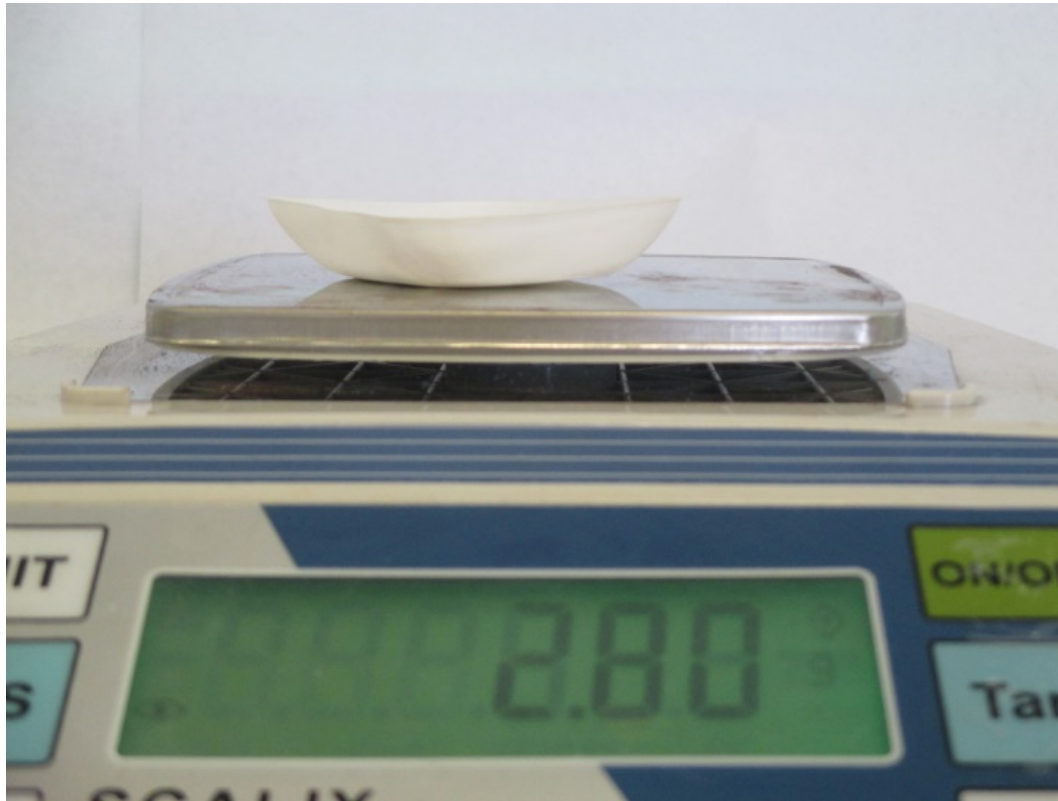
Practical 1: Make up a volumetric solution and carry out a simple acid-base titration – part 1

The volumetric flask

Using a volumetric flask, the liquid should be made up to just below the level mark and then carefully topped up drop by drop using a Pasteur pipette, until the bottom of the meniscus is touching the level mark on the flask.



Weighing the solid



Weighing the solid

- The solid should be weighed accurately on a balance to at least two decimal places.
- The mass of the weighing boat or bottle should be taken into account and the precise mass of the solid calculated.

Making a solution



Making a solution

- The solid is transferred to a beaker and the weighing boat re-weighed so the precise contents of the beaker are recorded.
- Add deionised or distilled water to the beaker with constant stirring.
- Only add about 100cm^3 at first to get the solid to dissolve.

Make the final solution

- Pour the contents of the beaker into the volumetric flask using the funnel.
- Wash the beaker out several times with a small amount of distilled or deionised water (20cm^3) and pour these washings into the flask.
- Make up the solution to 250cm^3 using distilled or deionised water.
- Add the last few drops with a pipette to avoid going over the level line.

Make the final solution

Label the solution with the precise mass of solid and use this solution for the titration.

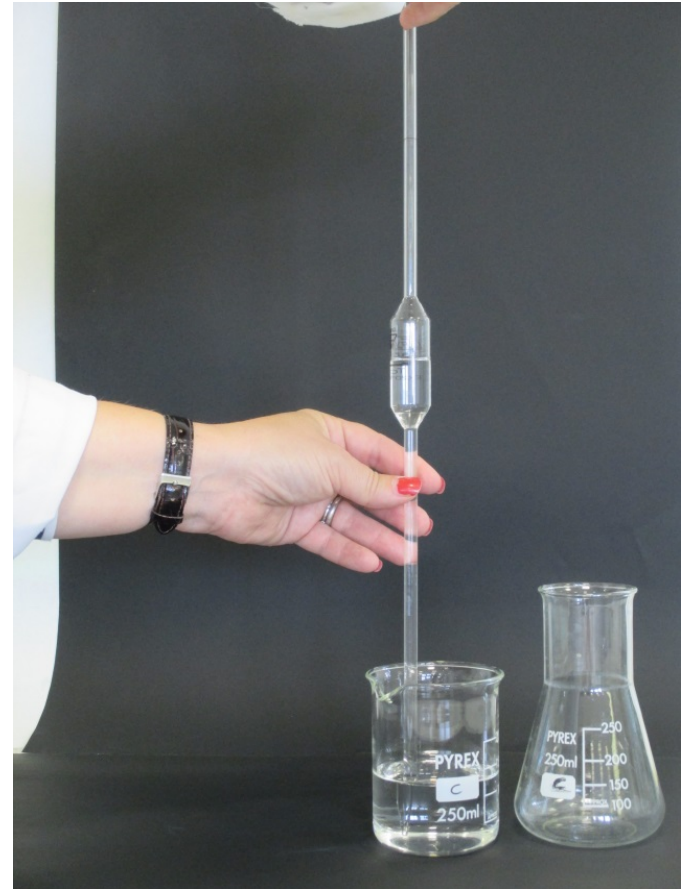


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Practical 1: Make up a volumetric solution and carry out a simple acid-base titration – part 2

Fill the pipette

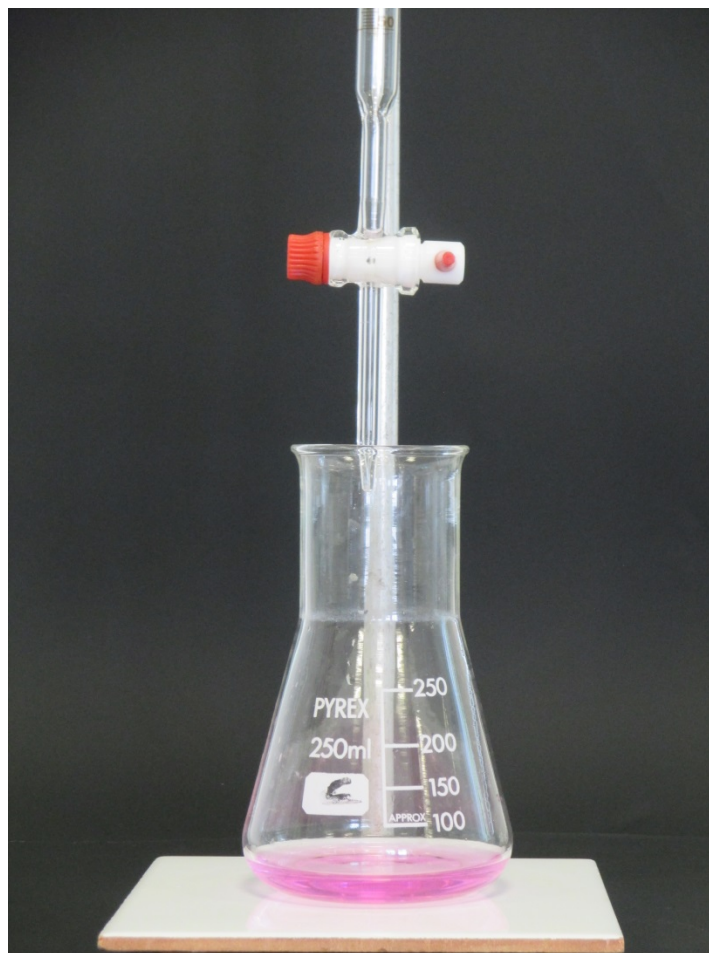
- Attach pipette filler to the pipette and hold the pipette vertically in the solution.
- Do not allow the pipette to rest on the bottom of the beaker but make sure it is well below the surface to prevent air getting into the pipette.
- Carefully fill the pipette to the level line and transfer the contents to a conical flask.



Titration

- Set up the burette and record the starting volume of the liquid.
- Remember to take the funnel out of the burette before the readings are taken so no drips can move down and alter the readings.
- Add a few drops of indicator to the conical flask and put the flask on a white surface under the burette.
- The tip of the burette should be just inside the neck of the conical flask.

Titration



End point

- The end point is reached when the colour has disappeared on swirling.
- The addition of one drop close to the end point can result in the permanent colour change so the burette should be used to add the chemical drop wise to the conical flask when near the end point.

End point

