

# Edexcel Chemistry A-level

## Practical 3

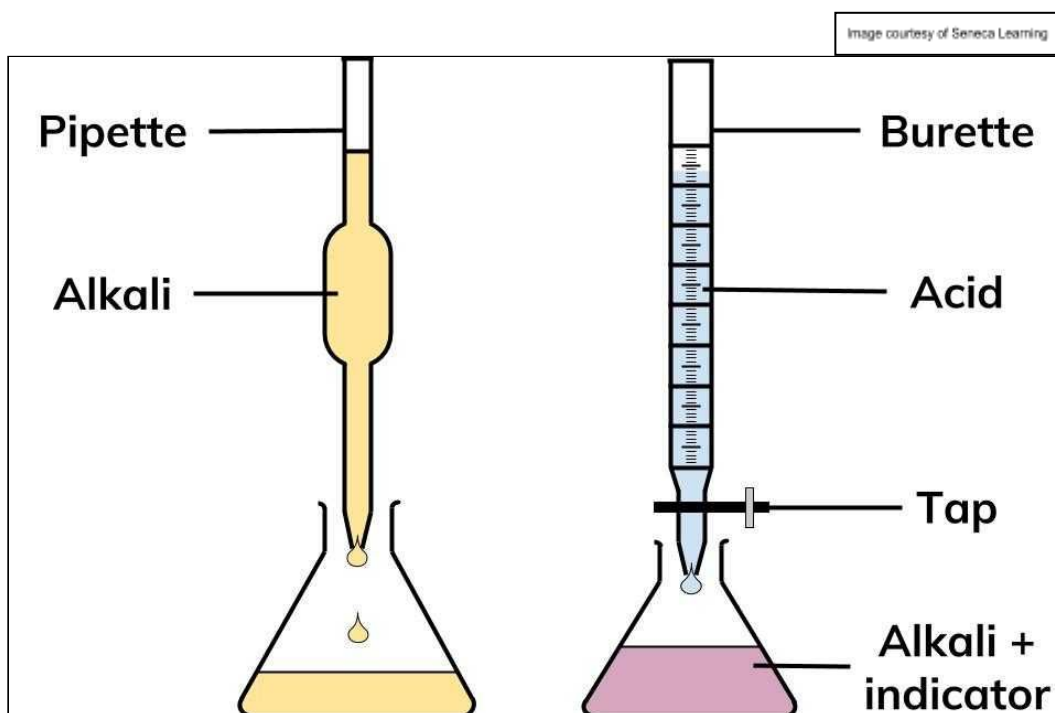
Titration to find the concentration of  
an acidic or alkaline solution.



## Method

- First carry out a quick trial titration to find the approximate end-point. Note down the value of this titre.  
 [Phenolphthalein is pink in the basic solution and colourless in acidic and neutral solutions. Methyl orange is yellow in basic solution, orange in neutral solution, and red in acidic solution.]
- Carry out a more accurate titration, adding the titrant drop by drop when approaching the end-point.  
 [When titrating, wash down the walls of a conical flask with a bit of distilled water from time to time. This will ensure that all the titrant ends up reacting with the analyte.]
- Repeat accurate titrations until you have at least two concordant (within  $0.20 \text{ cm}^3$ ) titres.
- Find a mean titre using these concordant values.

## Diagram



## Key Points

- Use a pipette filler to draw a little solution of your analyte into the pipette to rinse it.
- Calibrate the pipette by ensuring there are no air bubbles in the tip.
- Add the suitable indicator to the conical flask.
- Rinse and fill the burette with the solution of your titrant using a funnel.



## Errors

- Allow the titrant some time to drain down walls of burette before reading the burette.
- Swirl the conical flask so it mixes properly with the analyte.
- Use a white tile to make the colour change more noticeable.
- Diluting your solutions may produce a reading with smaller percentage error, (i.e. 10 cm<sup>3</sup> titre has a smaller percentage error than a 30 cm<sup>3</sup> titre).
- Phenolphthalein used in this titration may turn colourless at the end point if you leave the solution to stand. This because NaOH reacts with CO<sub>2</sub> from the air to form Na<sub>2</sub>CO<sub>3</sub>.

