Chemistry 2.1
Quantitative Analysis

Titration Tasks

Titration experiment #1- Standard solution

Aim: Prepare a standard solution of ~0.1 $molL^{-1}$ of Na_2CO_3

Type: Procedure

Method:

1) Calculate the mass of $Na_2CO_3(s)$ require to produce 250 mL of 0.1 $molL^{-1}$ Na_2CO_3 solution.

2) Weigh the calculated amount of $Na_2CO_3(s)$ into the weighing cup using electronic balance.

3) Record the exact mass

4) Half fill your volumetric flask with distilled water

5) Transfer the solid into the flask using a filter funnel

6) Rinse the cup as well as the funnel into the flask at least twice to ensure all substance is transferred

7) Fill the volumetric flask to the mark

Titration experiment #2- Standardising HCl

Aim: To find the concentration of unknown HCl

Type: Quantitative

Method:

1) Fill the burette with standard Na_2CO_3 solution
2) Pipette 20 mL of unknown HCl to a flask.
3) Add two to three drops of indicator to the flask.
4) Add Na_2CO_3 into the flask until end point reached
5) Record the titre, repeat process until 3 titres are within 0.2mL range.

Trial	#1	#2	#3	#4
Titre (mL)				

6) Using the results, calculate the concentration of unknown HCl

Titration experiment #3- Finding unknown NaOH

Aim: To find the concentration of unknown NaOH

Type: Quantitative

Method:

1) Fill the burette with standard HCl solution
2) Pipette 20 mL of unknown NaOH to a flask.
3) Add two to three drops of indicator to the flask.
4) Add HCl into the flask until end point reached
5) Record the titre, repeat process until 3 titres are within 0.2mL range.

Trial	#1	#2	#3	#4
Titre (mL)				

6) Using the results, calculate the concentration of unknown NaOH

Titration experiment #4- Finding unknown H_2SO_4

Aim: To find the concentration of unknown H_2SO_4

Type: Quantitative

Method:

1) Fill the burette with standard NaOH solution
2) Pipette 20 mL of unknown H_2SO_4 to a flask.
3) Add two to three drops of indicator to the flask.
4) Add NaOH into the flask until end point reached
5) Record the titre, repeat process until 3 titres are within 0.2mL range.

Trial	#1	#2	#3	#4
Titre (mL)				

6) Using the results, calculate the concentration of unknown H_2SO_4