

## Preparation instructions

### 1) 2.0 M NaOH Solution (200 mL)

1. Weigh 16.0 g of NaOH pellets into a 250 mL beaker.

2. Add 100 mL of distilled water to the beaker.

3. Stir the solution with a glass rod until the NaOH is completely dissolved.

4. Transfer the solution to a 250 mL volumetric flask.

5. Add distilled water to the flask until the volume reaches the 200 mL mark.

6. Stopper the flask and invert it several times to mix the solution thoroughly.

7. Label the flask as "2.0 M NaOH Solution".

### 2) 0.1 M NaOH Solution (200 mL)

1. Weigh 4.0 g of NaOH pellets into a 250 mL beaker.

2. Add 100 mL of distilled water to the beaker.

3. Stir the solution with a glass rod until the NaOH is completely dissolved.

4. Transfer the solution to a 250 mL volumetric flask.

5. Add distilled water to the flask until the volume reaches the 200 mL mark.

6. Stopper the flask and invert it several times to mix the solution thoroughly.

7. Label the flask as "0.1 M NaOH Solution".

## Procedure

1. Prepare 200 mL of 2.0 M NaOH solution.

2. Prepare 200 mL of 0.1 M NaOH solution.

3. Weigh 0.1000 g of KHP into a 100 mL beaker.

4. Add 50 mL of distilled water to the beaker.

5. Stir the solution with a glass rod until the KHP is completely dissolved.

6. Transfer the solution to a 100 mL volumetric flask.

7. Add distilled water to the flask until the volume reaches the 100 mL mark.

8. Stopper the flask and invert it several times to mix the solution thoroughly.

## Results and Discussion

1. Record the volume of 2.0 M NaOH solution used in the titration.

2. Record the volume of 0.1 M NaOH solution used in the titration.

3. Calculate the molarity of the 2.0 M NaOH solution.

4. Calculate the molarity of the 0.1 M NaOH solution.

5. Compare the results with the theoretical values.

6. Discuss the sources of error and their effect on the results.

7. Conclude the experiment.

