

7. Standardization of a NaOH Solution

Purpose:

To determine the molarity of an NaOH solution by reacting a known volume of each reagent, NaOH and KHP, and using the known molarity of the KHP solution to determine the molarity of the NaOH solution when the stoichiometric endpoint is detected.

Procedure:

1. Flush a buret several times with distilled water. Then, rinse the buret with 5mL portions of the NaOH solution. Drain the buret each rinse through the buret tip. Discard each rinse in the "water bases" container.
2. Using a clean funnel, fill the buret with the NaOH solution. Wait a few seconds, then record the initial buret volume of NaOH.
3. Place approximately 2 grams of KHP in an Erlenmeyer flask and dissolve it in distilled water. Add 2 drops of phenolphthalein indicator. Make certain that all the solid has dissolved.
4. Slowly add the NaOH to the KHP solution in 1-2mL increments. As the endpoint nears, the color change of the indicator slows. Occasionally rinse the walls of the flask with distilled water. Continue to add NaOH until the endpoint is reached. The color should persist for 30 seconds. Record the final volume of NaOH in the buret.
5. Refill the buret if necessary and repeat the titration process at least 2 more times.
6. Calculate the molarity of the NaOH solutions for each trial.

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