Acetic Acid Determination in Vinegar

Acid-Base Titration Method

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Background Theory

- • Vinegar contains Acetic Acid ($CH_3COOH + H_2O$)
- • Glacial Acetic Acid = pure anhydrous form (freezes at 16.6 °C)
- • Weak acid ($K_a = 1.8\times10^{-5}$) titrated against strong base (NaOH)

Sample Preparation

- 1. Pipette 10 mL of unknown vinegar
- 2. Dilute to 100 mL in volumetric flask
- 3. Shake well before titration

Titration Procedure

- 1. Transfer 10 mL of prepared solution
- 2. Add 2 drops of phenolphthalein
- 3. Fill burette with 0.1 N NaOH
- 4. Titrate until faint pink endpoint

Calculation Example

- If 30 mL of 0.2 N NaOH were used:
- %w/v = (N × V × Eq.Wt × 100) / Sample Volume
- Phenolphthalein chosen as equivalence pH ≈ 8.7