

Conductometric Titration of a Mixed Acid

Experiment 6 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To interpret the conductometric titration of the assigned strong/weak acid mixture.

Principle

Conductivity changes as ions are consumed and replaced. Changes in slope can locate equivalence regions when the assigned mixture gives distinguishable stages.

Requirements

- Conductivity meter/cell, assigned acid mixture, standardised base and calibrated titration equipment.

Procedure

1. Prepare the measurement

Check the cell and record temperature, test aliquot and titrant concentration.

2. Record titration data

Follow the prescribed additions and record conductivity and cumulative volume after stabilisation.

3. Apply the stated correction

Use the method-prescribed dilution correction where needed and plot corrected response against volume.

4. Locate stages

Fit the assigned straight-line regions and obtain their intersections; do not choose an endpoint solely from a single noisy reading.

5. Resolve the mixture

Use the validated first and total equivalence definitions for the specified strong/weak acid mixture.

Pharmaceutical Analysis

Observations and Record

Cumulative volume	Conductivity	Correction / region
_____	_____	_____
_____	_____	_____
_____	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- For the assigned monoprotic strong + weak acid model: strong-acid moles = $C_{\text{base}} \times V_1(\text{L})$; weak-acid moles = $C_{\text{base}} \times [V_2 - V_1](\text{L})$.
- Example: 0.1 mol/L base, $V_1 = 10 \text{ mL}$ and $V_2 = 25 \text{ mL}$ give 0.001 mol strong acid and 0.0015 mol weak acid.

Result

Record the completed observations, calculations and conclusion with units. State any limitation of the observation.

Precautions

- Keep temperature and cell placement consistent.
- Use the specified mixture model; endpoints may not be resolvable for every acid combination.

Viva Questions and Answers**1. Why does slope change?**

The ionic species and their contribution to conductivity change during neutralisation.

2. Why record temperature?

Conductivity is temperature dependent.

Continue Learning with FirstHope

Complete Notes on the FirstHope App

Complete subject and semesters are available on FirstHope app only.

- Get complete subject and semester notes in the FirstHope app.
- Available for B.Pharm, D.Pharm, M.Pharm and Pharm.D students.

[Click here to get the FirstHope app](#)

Join the FirstHope Telegram Channel

Join FirstHope Notes and keep up with channel updates.

[Click here to join Telegram](#)

Instagram

@firsthope.official

[Click here to follow Instagram](#)

YouTube Channel

FirstHope-Pharmacy / Live streams

[Click here to watch the YouTube channel](#)

WhatsApp Channel

Follow FirstHope on WhatsApp.

[Click here to join the WhatsApp channel](#)

FirstHope Website

firsthopenotes.com

[Click here to visit the website](#)