Quantitative Estimation of Urinary Chlorides

Experiment 17 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To estimate chloride in a simulated urine specimen by the assigned validated method.

Principle

An instructor-assigned argentometric method measures chloride through silver-chloride precipitation. Specimen pretreatment, pH and interfering ions must follow the validated urine procedure; an approved ion-selective method is a different option.

Requirements

- Simulated urine, chloride standard and controls
- Standardised silver titrant and prescribed endpoint system or approved analyser
- Assigned urine-method sheet and designated silver waste

Procedure

1. Review

Record pretreatment, tested volume, endpoint system, blank and titrant strength.

2. Prepare

Use the method-approved specimen preparation and dilution.

3. Measure

Perform the supervised titration or approved analyser method and record the actual response.

4. Check

Assess blank, controls and repeatability.

5. Calculate

Use the method stoichiometry and dilution; report mmol/L or the specified units.

Observations and Record

Field	Record
Test volume / dilution	_____
Test / blank titre	_____
Titrant molarity	_____
Control validity	_____
Chloride concentration / units	_____

Worked Example

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

- For a valid 1:1 silver-to-chloride titration: chloride mmol/L = corrected titre (mL) × titrant M × 1,000 / aliquot (mL) × dilution factor.
- Illustrative values: 5.00 mL of 0.0100 M silver titrant for a 1.00 mL aliquot at dilution factor 1 gives 50.0 mmol/L.

Result

Record the observed outcome and calculated value, with units. State whether the stated laboratory specification was met; do not copy the worked example as your result.

Precautions

- Use the validated urine method; a water-only chloride test is not automatically suitable for urine.
- Handle silver reagents and waste as instructed.
- Do not infer daily excretion without a valid timed collection and total volume.

Viva Questions and Answers

1. Why is the silver-chloride ratio 1:1?

One silver ion reacts with one chloride ion.

2. Why does the matrix matter?

Other components can affect precipitation or the endpoint.

3. How is timed excretion calculated?

Concentration multiplied by correctly collected urine volume, with consistent units.

First Hope

COMPLETE NOTES

Click here to visit our website

PHARMACY PRACTICAL NOTES

Complete subject and semesters are available on FirstHope app only.

Scan or click here

Click here to get the app >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHopeNotes

Instagram

@firsthope.official

Click here to follow >

YouTube channel

FirstHope-Pharmacy / Live streams

Click here to watch >

WhatsApp channel

Follow FirstHope on WhatsApp

Click here to join >

FirstHope website

firsthope.co.in

Click here to visit >

B.Pharm / D.Pharm / M.Pharm / Pharm.D

Complete subjects and semesters are available in the FirstHope app.