Identification and Purity Assessment of Caffeine

Experiment 19 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To assess the identity and assigned purity characteristics of caffeine.

Principle

A methylxanthine alkaloid. Identity requires the prescribed characteristic test; purity is evaluated separately with specified limits.

Requirements

- Assigned monograph and labelled material
- Instructor-prepared reagents and controls
- Balance, melting-point setup or supplied instrumental data

Procedure

1. Review

Record official identity reactions and assigned purity limits.

2. Physical assessment

Record appearance, solubility under the assigned conditions and melting range if required.

3. Identity test

Assigned pharmacopoeial identity or instructor-demonstrated colour reaction.

4. Compare controls

Record the actual test response alongside the positive and blank controls.

5. Purity assessment

Use the supplied spectral, melting and monograph identity data; avoid substituting appearance for identity.

6. Conclude

State identity support and each purity-test finding separately.

Observations and Record

Check	Observation / result
Appearance / solubility	_____
Identity reaction	_____
Melting range / supplied spectrum	_____
Purity test and stated limit	_____
Conclusion	_____

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 prescribed test rather than improvised reagents.
- Observe corrosive-reagent and solvent precautions.
- Do not taste any pharmaceutical material.

Viva Questions and Answers

1. Is one colour test fully specific?

Often not; the complete assigned identity scheme and controls are required.

2. How do identity and purity differ?

Identity establishes what the material is; purity tests examine unwanted components or specified attributes.

3. Why record limits?

A measurement cannot be classified without the applicable criterion.

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