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Cocoa Butter Suppository

Experiment 11 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare moulded suppositories with a cocoa butter base and explain the effect of temperature on setting.

Principle

Cocoa butter is a fatty suppository base with polymorphic behaviour. Excessive heating can produce forms that set or melt differently. Controlled melting and suitable cooling preserve a workable structure. Mould capacity depends on the particular base.

Requirements

- Prescribed cocoa butter formula, calibrated mould and any assigned ingredient.
- Balance, beaker, water bath, spatula and packaging.

Procedure

1. Calibrate

Use plain cocoa butter units to establish cavity capacity under the prescribed method. Calculate the required base and allowed processing excess.

2. Melt gently

Warm only sufficiently to obtain the prescribed workable melt. Avoid direct flame and unnecessarily high temperature.

3. Incorporate ingredients

For a plain-base exercise, mix to uniformity. If a drug is assigned, prepare and disperse it as prescribed and account for the base it displaces.

4. Fill and set

Pour uniformly into prepared cavities. Maintain suspension uniformity if solid material is present, then allow controlled setting.

5. Remove and assess

Trim if required, remove without damage, and weigh individual units. Inspect for cracking, exudation and visible sedimentation. Package under the assigned storage conditions.

Observations and Record

Measurement	Target / method	Record
Plain base cavity mass	Mean from calibrated units	___ g
Finished units	Appearance and number	_____
Individual mass	Weigh each unit	___ g

Worked Example

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

- Plain-base example: 8 cavities × 2.0 g per cavity = 16.0 g base before the allowed excess.
- For a medicated formula, define displacement value f as grams of drug displacing 1 g base. Base displaced = drug mass ÷ f.
- If 1.0 g drug has f = 2.0, it displaces 0.50 g base. Subtract this from the calibrated base requirement; do not merely add drug to a full mould quantity.

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

- Avoid overheating because polymorphic changes can alter setting and melting behaviour.
- Do not transfer a displacement value between different drug-base combinations without validation.
- Record the temperature and method used rather than claiming compliance from appearance alone.

Viva Questions and Answers

1. Why is cocoa butter heated gently?

Its crystal form can change with excessive heating.

2. What does displacement value describe?

The mass of drug that occupies the volume of a specified mass of base, under a stated convention.

3. Why calibrate the mould?

Cavity volume and base density together determine the mass that fits.

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