

Determination of Semisolid Viscosity by Brookfield Viscometer

Practical 08 | Physical Pharmaceutics II

Aim

To determine Semisolid Viscosity by Brookfield Viscometer, and interpret the recorded observations.

Principle

- A rotational viscometer reports an apparent viscosity linked to spindle, speed, temperature and measurement history. Non-Newtonian semisolids need these conditions stated.
- The property is obtained from a defined observable under controlled conditions.
- Replicate measurements, instrument checks and consistent units are needed before comparison.

Materials and Apparatus

- Assigned semisolid, Brookfield-type viscometer and specified spindle.
- Assigned test material and calibration or comparison material.
- The apparatus specified for this property, a balance or volumetric equipment where relevant, and a record sheet.

Method

1. Record the semisolid preparation and measurement temperature.
2. Select the assigned spindle and speed and check the instrument's valid torque range.
3. Position the spindle as specified and avoid entrained bubbles.
4. Obtain repeatable readings after the defined measurement history.
5. Record apparent viscosity together with spindle, speed, temperature and torque.
6. Compare readings only under stated equivalent conditions or explain the shear dependence.

Observation Record

Complete this record using actual laboratory findings or the provided teaching data.

Observation / parameter	Record / finding
Spindle	_____
Speed	_____
Temperature	_____
Torque validity	_____
Apparent viscosity	_____

Calculations and Interpretation

- Apply the instrument-approved spindle/speed factor or displayed result.
- Report apparent viscosity with spindle, speed and temperature; it is not necessarily one universal material constant.

Result

Record the actual finding, calculated value with units where relevant, and a conclusion supported by the observations.

Finding: _____

Conclusion: _____

Precautions

- Keep temperature and test conditions consistent across comparative readings.
- Record raw readings before rounding calculated values.
- Do not compare results obtained with different methods as if they were interchangeable.

Viva Questions

1. Why control the test conditions?

A change in conditions may alter the measured property independently of the intended variable.

2. Why retain replicate readings?

They show repeatability and help identify an anomalous measurement.

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