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Divided Powders

Experiment 9 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare individually weighed powder units with uniform composition and accurate mass.

Principle

A divided powder delivers one measured portion per packet. Total batch calculation must account for the number of units and all ingredients. Weighing individual units is more reliable than splitting a blend into visually equal piles.

Requirements

- Assigned formula, number of units and required mass per unit.
- Balance, dry mortar, powder papers or sachets and labels.

Procedure

1. Calculate the batch

Multiply each per-unit ingredient by the required number of units. Include only the excess explicitly allowed by the laboratory formula.

2. Mix

Prepare a uniform blend by geometric dilution. Keep the particle-size differences and any incompatibility in view.

3. Divide by weighing

Weigh each prescribed unit into its own paper or sachet. Recheck the tare and avoid transferring material between packets by eye.

4. Wrap or seal

Fold powder papers consistently or seal suitable sachets. Use a moisture-protective secondary container when required.

5. Evaluate and label

Record individual masses and total recovery. Label the preparation and unit instructions from the assigned exercise; an educational powder is not a patient prescription.

Observations and Record

Unit	Target mass	Measured mass
1	___ g	___ g
2	___ g	___ g
3	___ g	___ g

Worked Example

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

- For 10 teaching units, each with 100 mg ingredient A and 400 mg diluent: batch quantities are 1.00 g A and 4.00 g diluent. Each unit weighs 0.50 g.
- Illustrative measured masses 0.49, 0.50 and 0.51 g have mean 0.50 g. This small example does not establish batch compliance.
- Deviation (%) = (individual mass - target mass) ÷ target mass × 100. For 0.49 g against 0.50 g: -2%.

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

- Do not use visual equal division when the exercise requires weighed units.
- Uniform mass does not prove uniform active-ingredient content if the blend was poorly mixed.
- Choose packaging compatible with moisture sensitivity and the intended use.

Viva Questions and Answers

1. Why multiply by the number of units?

It gives the total amount of each component needed before division.

2. Can mass uniformity prove content uniformity?

No; the ingredient distribution also matters.

3. Why record each unit?

It makes deviations visible and allows the required uniformity assessment.

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