

**SNS COLLEGE OF PHARMACY
AND HEALTH SCIENCES**
Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Approved by Pharmacy Council of India, New Delhi.
Coimbatore -641035



PHARMACEUTICS (BP103T)

UNIT 3- MONOPHASIC LIQUID DOSAGE FORMS
CASE STUDY PUZZLES

1. The Cloudy Cough Syrup



A previously clear **cough syrup (oral solution)** becomes **cloudy** after 2 weeks of storage at room temperature. No precipitation is observed yet.

Puzzle:

What type of **instability** is beginning to occur, and name **two possible causes** for loss of clarity in a monophasic solution.

2. The Insoluble Vitamin Drop



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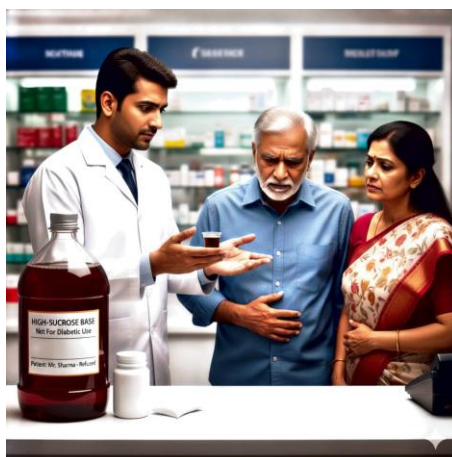


A vitamin formulation is prepared as an **aqueous oral drop solution**, but after filtration the product still shows **fine particles settling** at the bottom.

Puzzle:

What formulation mistake likely occurred regarding **solubility or co-solvents**, and how could it be corrected?

3. The Sweet Syrup vs Diabetic Patient



A pharmacist prepares a **high-sucrose syrup** to mask a bitter drug. A diabetic patient reports **GI discomfort** and refuses the preparation.

Puzzle:

What alternative **monophasic liquid base** could be used, and why is the conventional syrup unsuitable here?

4. The Alcohol Evaporation Elixir

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A flavored **elixir** stored in a partially opened bottle develops **precipitation of the drug** after a few days, even though it was previously clear.

Puzzle:

Explain how **alcohol evaporation** causes precipitation, and suggest **one preventive measure** for formulation or packaging.

5. The Preserved but Spoiled Mouthwash



A mint mouthwash contains a preservative, yet after one month it shows **microbial contamination** and bad odor. The pH of the product is **6.8**.

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Puzzle:

Why might the preservative have become **ineffective** at this pH, and what **adjustment** can restore antimicrobial activity?