Pharmaceutical Solutions

Experiment 4 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

A true solution contains dissolved solutes in a suitable solvent. Complex formation, acidity or alkalinity and solvent choice can influence solubility.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Identify the formulation

Record each solution name, strength, ingredient grade and route.

2. Prepare the solvent component

Dissolve any complexing or supporting ingredient before the solute where the formula specifies this sequence.

3. Incorporate the active component

Add gradually with mixing under the assigned ventilation and temperature controls.

4. Complete and examine

Cool where needed, adjust the final quantity and check clarity, pH if specified and absence of unintended solids.

5. Package and label

Select the specified container; distinguish external preparations from oral preparations.

Preparations in This Practical

Preparation	Formulation role / method distinction
Cresol with Soap Solution IP	Soap assists incorporation of cresol in water. Use the prescribed soap base and formula sequence.
Strong Ferric Chloride Solution BPC	Prepare the assigned ferric chloride solution; the formula-specified acid component helps control hydrolysis.
Aqueous Iodine Solution IP	Dissolve the prescribed iodide first, then add iodine and complete the aqueous volume.
Strong Iodine Solution IP	Follow the specified stronger iodine formula and solvent system; do not infer its composition from the aqueous solution.
Strong Ammonium Acetate Solution IP	Follow the assigned neutralisation method, control heat and complete the concentration after cooling.

Evaluation and Label

- Check clarity, colour, pH where specified and absence of precipitate.
- Use supervision for corrosive solutions, iodine, cresol and exothermic neutralisation.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Cresol with Soap Solution IP	_____	_____
Strong Ferric Chloride Solution BPC	_____	_____
Aqueous Iodine Solution IP	_____	_____
Strong Iodine Solution IP	_____	_____
Strong Ammonium Acetate Solution IP	_____	_____

Worked Example

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

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.

- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Check clarity, colour, pH where specified and absence of precipitate.
- Use supervision for corrosive solutions, iodine, cresol and exothermic neutralisation.

Viva Questions and Answers

1. Why dissolve iodide before iodine?

Iodide permits formation of more soluble iodine-containing species in water.

2. Why does ferric chloride require attention to solution conditions?

Hydrolysis may change its appearance and composition.

3. Why check the route?

Similar-looking solutions can have different strengths and uses.

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