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Cresol with Soap Solution

Experiment 3 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare a uniform cresol-with-soap solution and explain the solubilising role of soap.

Principle

Cresol is poorly miscible with water. A suitable soap system disperses and solubilises cresol in the aqueous vehicle. The soap composition, proportions and manufacturing sequence affect clarity, stability and dilution behaviour.

Composition

Use the prescribed IP master formula for the exact cresol concentration, soap ingredients and tests. Soap ingredients from different formulas are not interchangeable without reformulation.

Requirements

- Prescribed IP formula with cresol, soap-forming ingredients or specified soap and purified water.
- Balance, beakers, stirring equipment, controlled water bath and compatible bottle.

Procedure

1. Check the formulation

Identify whether the laboratory formula uses a prepared soap or forms soap from fatty material and alkali. Record strengths, quantities and final mass.

2. Prepare the soap phase

Prepare the prescribed soap system with controlled heating and mixing. Follow the stated endpoint; unreacted alkali is not an acceptable substitute for soap.

3. Incorporate cresol

Add cresol gradually to the soap phase with steady mixing in the prescribed ventilated area. Avoid splashing and uncontrolled heating.

4. Adjust the batch

Add the remaining vehicle as directed, cool, then adjust to final mass or volume on the formula basis. Mix until uniform.

5. Evaluate and package

Record appearance and separation after standing. Perform the specified dilution test and record observations. Use a tightly closed compatible container and the required external-use and dilution instructions.

Observations and Record

Test	What to observe	Record
Undiluted appearance	Uniformity, colour, clarity	_____
Standing / dilution	Separation or turbidity under stated conditions	_____
Yield	Final mass or volume on formula basis	_____

Worked Example

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

- Scaling example: a master batch is 1000 g and the practical batch is 50 g. Scale factor = $50 \div 1000 = 0.05$.
- If one ingredient is 200 g in that master batch, its calculated quantity is $200 \times 0.05 = 10$ g.
- Do not interpret this scaling example as the cresol concentration or as a complete official formula.

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

- Cresol is hazardous by skin contact and inhalation; use the instructor-specified protection and ventilation.
- Do not taste, smell directly or use the laboratory preparation on a person.
- Record any separation; do not hide it by shaking immediately before inspection.

Viva Questions and Answers

1. Why is soap included?

It assists dispersion and solubilisation of cresol in the water-containing system.

2. Why perform a dilution test?

A preparation may appear uniform when concentrated but behave differently after adding water.

3. What can excess free alkali indicate?

An incorrect or incomplete soap-making stage and possible formulation non-compliance.

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