Identification

Identification Tests

The United States Pharmacopeia (USP) specifies two primary identification tests for Sodium Chloride to confirm the presence of both sodium and chloride ions. These tests are essential for verifying the identity of the material before further assay or purity testing.

Test A: Identification of Sodium

This test follows the general chapter <191> for sodium identification. It typically involves a flame test or specific chemical reactions.

Step-by-Step Instructions

1. Prepare a solution of the sample in water (approx. 5% w/v).
2. Introduce a small amount of the solution into a non-luminous flame using a platinum wire.
3. Observe the color of the flame.

Acceptance Criteria

- An intense yellow color is produced in the flame.

Test B: Identification of Chloride

Chloride is identified by the formation of a silver chloride precipitate that is soluble in ammonium hydroxide.

Step-by-Step Instructions

1. Dissolve approximately 3 mg of Sodium Chloride in 2 mL of water.
2. Acidify the sample solution with diluted nitric acid.
3. Add 0.4 mL of Silver Nitrate Test Solution (TS).
4. Shake the mixture and allow it to stand. A curdled, white precipitate (AgCl) should form.

5. Centrifuge the mixture and wash the precipitate with three 1-mL portions of water, discarding the washings.
6. Suspend the precipitate in 2 mL of water and add 1.5 mL of 10 N ammonium hydroxide.

Acceptance Criteria

- The white precipitate dissolves easily (some large particles may dissolve slowly).

Tips and Cautions

Category	Detail
Lighting	The chloride test (silver nitrate reaction) must be carried out rapidly in subdued light, as silver chloride is light-sensitive and will darken over time.
Waste Management	Silver nitrate waste should be collected in a dedicated container for heavy metal disposal.
Reagent Strength	Ensure the ammonium hydroxide is at the correct strength (10 N) for complete dissolution.

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