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Hypophosphorous Acid

H₃PO₂ 66.00
Phosphinic acid;
Hypophosphorous acid CAS RN®: 6303-21-5.

DEFINITION

Hypophosphorous Acid contains NLT 30.0% and NMT 32.0% of H₃PO₂.

IDENTIFICATION

- **A.** Hypophosphorous Acid yields a white precipitate with mercuric chloride TS. This precipitate becomes gray when an excess of hypophosphite is present.
- **B.** Hypophosphorous Acid acidified with sulfuric acid and warmed with cupric sulfate TS yields a red precipitate.

ASSAY

• **PROCEDURE**

Sample solution: Pour 7 mL of Hypophosphorous Acid into a tared, glass-stoppered flask, and weigh. Dilute with about 25 mL of water, and add phenolphthalein TS.
Analysis: Titrate with 1 N sodium hydroxide VS. Each mL of 1 N sodium hydroxide is equivalent to 66.00 mg of H₃PO₂.
Acceptance criteria: 30.0%–32.0%

SPECIFIC TESTS

• **LIMIT OF BARIUM AND OXALATE**

Sample solution: Hypophosphorous Acid and water (1:3)
Analysis 1: Neutralize 30 mL of the *Sample solution* with 6 N ammonium hydroxide: the mixture exhibits little or no precipitation. Filter, acidify 10 mL of the filtrate with hydrochloric acid, and add 2 mL of potassium sulfate TS.
Acceptance criteria 1: No turbidity is produced (barium).
Analysis 2: To a 10-mL portion of the filtrate obtained in *Analysis 1*, add 1 mL of calcium chloride TS.
Acceptance criteria 2: The filtrate shows no turbidity upon the addition of the calcium chloride TS (oxalate).

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight containers.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
HYPOPHOSPHOROUS ACID	Documentary Standards Support	SE2020 Simple Excipients
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SE2020 Simple Excipients

Chromatographic Database Information: [Chromatographic Database](#)

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