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Diluted Phosphoric Acid

DEFINITION

Diluted Phosphoric Acid contains, in each 100 mL, NLT 9.5 g and NMT 10.5 g of phosphoric acid (H_3PO_4).

Diluted Phosphoric Acid may be prepared as follows.

Phosphoric Acid	69 mL
Purified Water, a sufficient quantity to make	1000 mL

Mix the ingredients.

IDENTIFICATION

• **A.** [IDENTIFICATION TESTS—GENERAL, Phosphate \(191\)](#).

Sample: 100 mL

Analysis: Carefully neutralize the *Sample* with 1 N sodium hydroxide. Use phenolphthalein TS as the indicator.

Acceptance criteria: Meets the requirements

ASSAY

• **PROCEDURE**

Sample: 10 mL

Blank: 50 mL of water

Titrimetric system

(See [Titrimetry \(541\)](#).)

Mode: Direct titration

Titrant: 1 N sodium hydroxide VS

Endpoint detection: Visual

Analysis: Dilute the *Sample* with water to 50 mL. Add 0.5 mL of thymolphthalein TS. Titrate with *Titrant* to the first appearance of a blue color. Perform a blank determination.

Calculate the amount of phosphoric acid (H_3PO_4) in the portion of the sample taken:

$$\text{Result} = (V_S - V_B) \times N \times F$$

V_S = *Titrant* volume consumed by the *Sample* (mL)

V_B = *Titrant* volume consumed by the *Blank* (mL)

N = actual normality of the *Titrant* (mEq/mL)

F = equivalency factor, 4.9×10^{-2} g/mEq

Acceptance criteria: 9.5–10.5 g per 100 mL

IMPURITIES

• **LIMIT OF NITRATE**

Sample: 100 mL

Analysis: To the *Sample* add 0.1 mL of indigo carmine TS, then 5 mL of sulfuric acid.

Acceptance criteria: The blue color is not discharged within 1 min.

SPECIFIC TESTS

- **ALKALI PHOSPHATES**
Sample: 20 mL
Analysis: Evaporate the *Sample* on a steam bath to a weight of 5 g. Cool, transfer 2 mL to a graduated cylinder, and add 6 mL of ether and 2 mL of alcohol.
Acceptance criteria: No turbidity is produced
- **PHOSPHOROUS OR HYPOPHOSPHOROUS ACID**
Sample: 100 mL
Analysis: Gently warm the *Sample*, and add 2 mL of silver nitrate TS.
Acceptance criteria: The mixture does not become brownish.
- **CHLORIDE AND SULFATE, *Sulfate* (221).**
Sample: 100 mL
Analysis: To the *Sample* add 1 mL of barium chloride TS.
Acceptance criteria: No precipitate is formed immediately.

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
DILUTED PHOSPHORIC 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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