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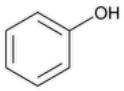
Phenol



C_6H_6O 94.11

Phenol CAS RN®: 108-95-2.

DEFINITION

Phenol contains NLT 99.0% and NMT 100.5% of phenol (C_6H_6O), calculated on the anhydrous basis. It may contain a suitable stabilizer.

IDENTIFICATION

[**Caution—**Avoid contact with skin because serious burns may result.]

- **A.**

  Analysis: To a solution add bromine TS.

  Acceptance criteria: A white precipitate is formed, and it dissolves at first but becomes permanent as more of the reagent is added.

- **B.**

  Sample solution: 1 in 100

  Analysis: To 10 mL of the *Sample solution* add 1 drop of ferric chloride TS.

  Acceptance criteria: A violet color is produced.

ASSAY

- **Procedure**

  Sample: 2 g

  Titrimetric system

  (See *Titrimetry* ⟨541⟩.)

  Mode: Residual titration

  Titrant: 0.1 N bromine VS

  Back-titrant: 0.1 N sodium thiosulfate VS

  Endpoint detection: Visual

  Analysis: Place the *Sample* in a 1000-mL volumetric flask, and dilute with water to volume. Pipet 20 mL of the solution into an iodine flask, add 30.0 mL of *Titrant*, then add 5 mL of hydrochloric acid, and immediately insert the stopper. Shake the flask repeatedly during 30 min, allow it to stand for 15 min, quickly add 5 mL of potassium iodide solution (1 in 5), taking precautions against the escape of bromine vapor, and at once insert the stopper. Shake thoroughly, remove the stopper, and rinse it and the neck of the flask with a small quantity of water so that the washing flows into the flask. Add 1 mL of chloroform, and shake the mixture. Titrate the liberated iodine with *Back-titrant*, adding 3 mL of starch TS as the endpoint is approached. Perform a blank determination. Each mL of 0.1 N bromine is equivalent to 1.569 mg of phenol (C_6H_6O).

  Acceptance criteria: 99.0%–100.5% on the anhydrous basis

IMPURITIES

- **Limit of Nonvolatile Residue**

  Sample: 5 g

  Analysis: Heat the *Sample* in a tared porcelain dish on a steam bath until it has evaporated, and dry the residue at 105° for 1 h.

  Acceptance criteria: NMT 0.05%

SPECIFIC TESTS

- **Clarity of Solution and Reaction**

  Sample solution: 1 in 15

  Acceptance criteria: The *Sample solution* is clear, and it is neutral or acid to litmus paper.

- **Congealing Temperature** ⟨651⟩**:** NLT 39°
- **Water Determination,** *Method I* ⟨921⟩**:** NMT 0.5%

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in tight, light-resistant containers.
- **Labeling:** Label it to indicate the name and amount of any substance added as a stabilizer.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
PHENOL	Documentary Standards Support	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

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