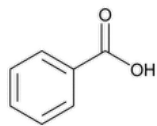


Status: Currently Official on 17-Feb-2025
Official Date: Official as of 01-Jan-2018
Document Type: USP Monographs
DocId: GUID-053F42E6-7D43-4A5D-B644-120D467FFFA0_3_en-US
DOI: https://doi.org/10.31003/USPNF_M8130_03_01
DOI Ref: yav08

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Benzoic Acid



$C_7H_6O_2$ 122.12

Benzoic acid CAS RN®: 65-85-0.

DEFINITION

Benzoic Acid contains NLT 99.5% and NMT 100.5% of benzoic acid ($C_7H_6O_2$), calculated on the anhydrous basis.

IDENTIFICATION

• **A.**

Sample solution: Prepare a saturated solution of Benzoic Acid in water, and filter twice.

Analysis 1: To one portion of the filtrate add ferric chloride TS.

Acceptance criteria 1: A salmon-colored precipitate is formed.

Analysis 2: To a separate 10-mL portion of the filtrate add 1 mL of 7 N sulfuric acid, and cool the mixture.

Acceptance criteria 2: A white precipitate forms in 10 min. This precipitate is soluble in ether.

ASSAY

• **PROCEDURE**

Sample: 500 mg of Benzoic Acid

Analysis: Dissolve the *Sample* in 25 mL of diluted alcohol that previously has been neutralized with 0.1 N sodium hydroxide. Add phenolphthalein TS, and titrate with 0.1 N sodium hydroxide VS to a pink color. Each mL of 0.1 N sodium hydroxide is equivalent to 12.21 mg of benzoic acid ($C_7H_6O_2$).

Acceptance criteria: 99.5%–100.5% on the anhydrous basis

IMPURITIES

• [RESIDUE ON IGNITION \(281\)](#): NMT 0.05%

SPECIFIC TESTS

• [CONGEALING TEMPERATURE \(651\)](#): 121°–123°

• [WATER DETERMINATION, Method I \(921\)](#)

Sample solution: A 1-in-2 solution of methanol in pyridine is used as the solvent.

Acceptance criteria: NMT 0.7%

• [READILY CARBONIZABLE SUBSTANCES TEST \(271\)](#)

Sample solution: 500 mg in 5 mL of sulfuric acid

Acceptance criteria: The solution has no more color than *Matching Fluid Q*.

• **READILY OXIDIZABLE SUBSTANCES**

Sample solution: Add 1.5 mL of sulfuric acid to 100 mL of water. Heat to boiling, and add 0.1 N potassium permanganate, dropwise, until the pink color persists for 30 s. Dissolve 1.00 g of Benzoic Acid in the hot solution.

Analysis: Titrate with 0.1 N potassium permanganate VS to a pink color that persists for 15 s.

Acceptance criteria: NMT 0.50 mL of 0.10 N potassium permanganate is consumed.

ADDITIONAL REQUIREMENTS

• **PACKAGING AND STORAGE:** Preserve in well-closed containers.

Topic/Question	Contact	Expert Committee
BENZOIC ACID	Documentary Standards Support	SM12020 Small Molecules 1
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM12020 Small Molecules 1

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. PF 34(5)

Current DocID: GUID-053F42E6-7D43-4A5D-B644-120D467FFFA0_3_en-US

Previous DocID: GUID-053F42E6-7D43-4A5D-B644-120D467FFFA0_1_en-US

DOI: https://doi.org/10.31003/USPNF_M8130_03_01

DOI ref: [yav08](#)

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