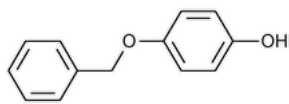


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Monobenzene



$C_{13}H_{12}O_2$ 200.24
Phenol, 4-(phenylmethoxy)-;
p-(Benzyloxy)phenol CAS RN®: 103-16-2; UNII: 9L2KA76MG5.

DEFINITION

Monobenzene contains NLT 98.0% and NMT 102.0% of monobenzene ($C_{13}H_{12}O_2$), calculated on the dried basis.

IDENTIFICATION

• **A. SPECTROSCOPIC IDENTIFICATION TESTS (197), Infrared Spectroscopy:** 197K

Change to read:

• **B. SPECTROSCOPIC IDENTIFICATION TESTS (197), Ultraviolet-Visible Spectroscopy:** 197U

Analytical wavelength: 292 nm

▲ **Standard solution:** 10 µg/mL of [USP Monobenzene RS](#) in [methanol](#) ▲ (USP 1-Dec-2020)

Sample solution: 10 µg/mL in [methanol](#)

Acceptance criteria: Absorptivities ▲ of the *Standard solution* and *Sample solution*, ▲ (USP 1-Dec-2020) calculated on the dried basis, do not differ by more than 3.0%.

Delete the following:

▲ • **C. MELTING RANGE OR TEMPERATURE (741), Class I**

Sample: Transfer 500 mg of Monobenzene, previously dried, to a 150-mL flask fitted with a reflux condenser, using a suitable glass joint. Add 5 mL of pyridine and 3 mL of acetic anhydride. Reflux for 10 min, and cool. Add 100 mL of water and 6 mL of acetone to the flask, and insert a stopper. Cool the contents of the flask in a refrigerator for 1 h, collect the precipitate in a sintered-glass crucible, and wash the precipitate with water until no odor of pyridine remains. Dry the precipitate for 16 h in a vacuum desiccator over phosphorus pentoxide.

Acceptance criteria: The monobenzene acetate so obtained melts between 110° and 113°. ▲ (USP 1-Dec-2020)

ASSAY

• **PROCEDURE**

Standard solution: 40 µg/mL of [USP Monobenzene RS](#) in [methanol](#)

Sample solution: 40 µg/mL of Monobenzene in [methanol](#)

Spectrometric conditions

Mode: UV

Analytical wavelength: Maximum absorbance at about 292 nm

Blank: [Methanol](#)

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of monobenzene ($C_{13}H_{12}O_2$) in the portion of Monobenzene taken:

$$\text{Result} = (A_U/A_S) \times (C_S/C_U) \times 100$$

A_U = absorbance of the *Sample solution*

A_S = absorbance of the *Standard solution*

C_S = concentration of [USP Monobenzene RS](#) in the *Standard solution* (µg/mL)

C_U = concentration of the *Sample solution* (µg/mL)

Acceptance criteria: 98.0%–102.0% on the dried basis

IMPURITIES

- [RESIDUE ON IGNITION \(281\)](#): NMT 0.5%

SPECIFIC TESTS

Delete the following:

- ▲ • [MELTING RANGE OR TEMPERATURE \(741\)](#), [Class I](#): 117°–120° ▲ (USP 1-Dec-2020)
- [LOSS ON DRYING \(731\)](#)

Analysis: Dry at 105° for 3 h.
Acceptance criteria: NMT 1.0%

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight, light-resistant containers, and avoid exposure to temperatures above 30°.
- [USP REFERENCE STANDARDS \(11\)](#)
[USP Monobenzone RS](#)

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

Topic/Question	Contact	Expert Committee
MONOBENZONE	Documentary Standards Support	SM32020 Small Molecules 3

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

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