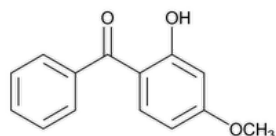


Status: Currently Official on 16-Feb-2025
 Official Date: Official as of 01-May-2020
 Document Type: USP Monographs
 DocId: GUID-96AD350F-7814-4C3B-B9B7-1C781200FE3A_2_en-US
 DOI: https://doi.org/10.31003/USPNF_M59410_02_01
 DOI Ref: t5mv7

© 2025 USPC
 Do not distribute

Oxybenzone



$C_{14}H_{12}O_3$ 228.24

Methanone, (2-hydroxy-4-methoxyphenyl)phenyl-;

2-Hydroxy-4-methoxybenzophenone CAS RN[®]: 131-57-7; UNII: 9500S7VE0Y.

DEFINITION

Oxybenzone contains NLT 97.0% and NMT 103.0% of oxybenzone ($C_{14}H_{12}O_3$), calculated on the dried basis.

IDENTIFICATION

Change to read:

- **A.** ▲ [SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Infrared Spectroscopy: 197K](#) ▲ (CN 1-MAY-2020)
- **B.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the Assay.

ASSAY

• PROCEDURE

Mobile phase: Methanol and water (70:30)

Standard solution: 0.1 mg/mL of [USP Oxybenzone RS](#) in *Mobile phase*. Sonicate if necessary to dissolve.

Sample solution: 0.1 mg/mL of Oxybenzone in *Mobile phase*. Sonicate if necessary to dissolve.

Chromatographic system

(See [Chromatography \(621\)](#), [System Suitability](#).)

Mode: LC

Detector: UV 289 nm

Column: 4.6-mm × 7.5-cm; 3.5-μm packing L1

Flow rate: 1 mL/min

Injection volume: 20 μL

System suitability

Sample: *Standard solution*

Suitability requirements

Tailing factor: NMT 1.5

Relative standard deviation: NMT 0.73%

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of oxybenzone ($C_{14}H_{12}O_3$) in the portion of Oxybenzone taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

r_U = peak response from the *Sample solution*

r_S = peak response from the *Standard solution*

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

C_U = concentration of Oxybenzone in the *Sample solution* (mg/mL)

Acceptance criteria: 97.0%–103.0% on the dried basis

SPECIFIC TESTS

- [CONGEALING TEMPERATURE \(651\)](#): NLT 62.0°
- [LOSS ON DRYING \(731\)](#)

Analysis: Dry a sample in a vacuum at 40° for 2 h.

Acceptance criteria: NMT 2.0%

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight, light-resistant containers.
- [USP REFERENCE STANDARDS \(11\)](#)
[USP Oxybenzone RS](#)

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

Topic/Question	Contact	Expert Committee
OXYBENZONE	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](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. PF 38(6)

Current DocID: GUID-96AD350F-7814-4C3B-B9B7-1C781200FE3A_2_en-US

DOI: https://doi.org/10.31003/USPNF_M59410_02_01

DOI ref: [t5mv7](#)

OFFICIAL