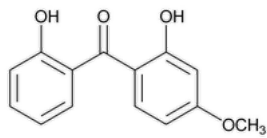


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Dioxybenzone



$C_{14}H_{12}O_4$ 244.24
Methanone, (2-hydroxy-4-methoxyphenyl)(2-hydroxyphenyl)-;
2,2'-Dihydroxy-4-methoxybenzophenone CAS RN®: 131-53-3; UNII: B762XZ551X.

DEFINITION
Dioxybenzone contains NLT 97.0% and NMT 103.0% of dioxybenzone ($C_{14}H_{12}O_4$), 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 (60:40)
Standard solution: 0.1 mg/mL of [USP Dioxybenzone RS](#) in *Mobile phase*. Sonicate if necessary to dissolve.
Sample solution: 0.1 mg/mL of Dioxybenzone in *Mobile phase*. Sonicate if necessary to dissolve.
Chromatographic system
(See [Chromatography \(621\)](#), *System Suitability*.)
Mode: LC
Detector: UV 286 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 dioxybenzone ($C_{14}H_{12}O_4$) in the portion of Dioxybenzone 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 Dioxybenzone RS](#) in the *Standard solution* (mg/mL)
 C_U = concentration of Dioxybenzone in the *Sample solution* (mg/mL)

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

SPECIFIC TESTS
• [CONGEALING TEMPERATURE \(651\)](#): NLT 68.0°
• [LOSS ON DRYING \(731\)](#)

Analysis: Dry a sample under 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 Dioxybenzone RS](#)

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

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

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:
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