

Status: Currently Official on 16-Feb-2025
Official Date: Official as of 01-Nov-2020
Document Type: USP Monographs
DocId: GUID-8E808637-3B26-432A-BCDE-A4DFF35020FD_2_en-US
DOI: https://doi.org/10.31003/USPNF_M59550_02_01
DOI Ref: 60e7x

© 2025 USPC
Do not distribute

Oxygen

O₂ 32.00

Oxygen CAS RN®: 7782-44-7; UNII: S88TT14065.

DEFINITION

Oxygen contains NLT 99.0% of oxygen (O₂) by volume.

IDENTIFICATION

- **A.** The paramagnetic signal exhibited by the *Sample gas* in the Assay confirms the presence of oxygen.
- **B.** The *Sample gas* in the Assay meets the *Acceptance criteria*.

ASSAY

• PROCEDURE

The certified standards called for in the following test are listed in [Reagents, Indicators, and Solutions](#).

Zero gas: Nitrogen certified standard

Span gas: Oxygen certified standard

Sample gas: Oxygen under test

Mode: Paramagnetic oxygen measurement (see [Medical Gases Assay \(415\)](#))

Analysis: Determine the concentration of oxygen in percentage by volume in Oxygen using a suitable paramagnetic analyzer.

Acceptance criteria: NLT 99.0% by volume

IMPURITIES

Change to read:

See [Impurities Testing in Medical Gases ▲ \(ERR-1-Nov-2020\) \(413\)](#). The detector tubes called for in the following tests are listed in [Reagents, Indicators, and Solutions](#). If the label indicates that Oxygen is produced by the air-liquefaction process, then the *Impurities* tests are not required.

• LIMIT OF CARBON DIOXIDE

Sample: Detector tube manufacturer's recommended volume, ±5% of Oxygen

Analysis: Pass the *Sample* through a carbon dioxide detector tube at the rate specified for the tube by the detector tube manufacturer.

Acceptance criteria: NMT 300 ppm

• LIMIT OF CARBON MONOXIDE

Sample: Detector tube manufacturer's recommended volume, ±5% of Oxygen

Analysis: Pass the *Sample* through a carbon monoxide detector tube at the rate specified for the tube by the detector tube manufacturer.

Acceptance criteria: NMT 10 ppm

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in pressurized containers. Container connections shall be appropriate for Oxygen. Adaptors shall not be used to connect containers to patient-use supply system piping or equipment.
- **LABELING:** Label states if Oxygen was produced by the air-liquefaction process. Where it is piped directly from the cylinder or storage tank to the patient point of use, label each outlet "Oxygen".

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

Topic/Question	Contact	Expert Committee
OXYGEN	Documentary Standards Support	SM52020 Small Molecules 5
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM52020 Small Molecules 5

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. PF 39(1)

Current DocID: GUID-8E808637-3B26-432A-BCDE-A4DFF35020FD_2_en-US

DOI: https://doi.org/10.31003/USPNF_M59550_02_01

DOI ref: [60e7x](#)

OFFICIAL