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Gaseous breathing oxygen supplies for aircraft

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2046 was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and circulated to the Member Bodies in October 1970.

It has been approved by the Member Bodies of the following countries :

Austria	Israel	Thailand
Belgium	Italy	Turkey
Canada	Netherlands	United Kingdom
Czechoslovakia	New Zealand	U.S.S.R.
Egypt, Arab Rep. of	South Africa, Rep. of	
India	Spain	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

France
Germany
U.S.A.

Gaseous breathing oxygen supplies for aircraft

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the pressure and characteristics of gaseous breathing oxygen for use in aircraft, and is applicable primarily to gas as supplied by the manufacturer. It is also an acceptable standard which may be invoked in subsequent stages of distribution.

2 PRESSURE

The gaseous oxygen shall be supplied at sufficient pressure to charge aircraft systems to their maximum working pressure.

NOTE — The maximum working pressures of aircraft oxygen systems currently in use lie within pressures of 31 to 207 bar (450 to 3 000 lbf/in²).¹⁾

3 CHARACTERISTICS

3.1 Purity

The minimum purity of the oxygen shall be 99,5 % by volume. The remainder shall be as defined in 3.2 to 3.5 inclusive in respect of flammability, toxicity, odour, dryness and particles of solid material.

3.2 Water

The water content of the oxygen shall not exceed 5 mg/m³ of oxygen when measured at 15 °C and a pressure of 1 013 mbar (760 mmHg).

NOTE — For certain aircraft, depending on operational circumstances such as infrequent use of the oxygen system, and environmental temperatures above a certain minimum, a higher water content may be permitted but shall not exceed 20 mg/m³ when measured from the aircraft cylinder output.

3.3 Odour

The gas shall be odourless as judged by subjective tests.

3.4 Flammability and toxicity

The total hydrocarbon content shall not exceed 60 p.p.m. by volume measured at 15 °C and a pressure of 1 013 mbar (760 mmHg). The total contamination shall not produce toxic effects in the user.

3.5 Solids

The gas shall contain no particles with any dimensions larger than 100 μm. The total mass of solids shall not exceed 1 mg/m³ of gas at 15 °C and a pressure of 1 013 mbar (760 mmHg).

1) 1 bar = 100 kN/m² = 100 kPa.