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INTERNATIONAL
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AEROSPACE STANDARD

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AVIATOR'S BREATHING OXYGEN PURITY STANDARD

1. SCOPE:

This document defines the minimum degree of purity for aviator's breathing oxygen at the point of manufacture. It covers gaseous, liquid, and chemically generated oxygen.

2. REFERENCES: (for Test Methods)

2.1 Military Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-O-27210 Oxygen, Aviator's Breathing, Liquid and Gas

3. GENERAL REQUIREMENTS:

3.1 Aviator's Breathing Oxygen (ABO) must contain not less than 99.5% oxygen by volume. The oxygen must contain no odor. The remainder, except for moisture and minor constituents specified in Table 1, may be argon, nitrogen, or similar inert gas.

3.2 Moisture (Water Vapor):

3.2.1 Moisture in liquid or gaseous oxygen must not exceed 5 μg/L of gas at a temperature of 21.1 °C (70 °F) and pressure of 101.3 kPa (760 mm) of mercury. This corresponds to a dewpoint of -63.3 °C (-82 °F).

3.2.2 Moisture in chemically generated oxygen when oxygen is being used at the rate at which it is generated must not exceed 20 mg/L (20 g/m^3) of oxygen at 21.1 °C (70 °F) and 101.3 kPa (760 mm of Hg). This corresponds to a dewpoint of 25 °C (77 °F).

TABLE 1 - Constituent Maximum Concentration in Parts Per Million (By Volume)

	Type I - Gaseous	Type II - Liquid	Chemically Generated[1]
Carbon Dioxide (CO_2)	10	5	5000
Chlorine and Chlorine Derivatives (Cl)	-	-	0.2
Carbon Monoxide (CO)	-	-	15
Methane (CH_4)	50	25	-
Acetylene (C_2H_2)	0.1	0.05	-
Ethylene (C_2H_4)	0.4	0.2	-
Ethane (C_2H_6) and other hydrocarbons	6 (C_2H_6 equivalent)	3 (C_2H_6 equivalent)	- -
Nitrous Oxide (N_2O)	4	2	-
Halogenated compounds: Refrigerants (freons, etc.)	2	1	-
Solvents (trichloroethylene, carbon tetrachloride, etc.)	0.2	0.1	0.2
Other (each discernible from background noise on infrared spectrophotometer)	0.2	0.1	-

[1]The values shown for chemically generated oxygen are the time weighted average concentrations for periods not exceeding 5 min over the duration of the burn. Within that 5 min period, the peak allowable values for individual impurities are as shown in Table 2.