

## Marking

CAS

Characterization acc. ADR

Cylinder Marking

7782-44-7  
UN 1072 OXYGEN,  
COMPRESSED, 2.2 (5.1), (E)



Shoulder color: white

## Essential properties

compressed gas, colorless, odorless, oxidizing

Symbols of risks



## Physical Properties

molecular weight	31,9988 kg/mol
gas density at 0°C and 1,013 bar	1,429 kg/m <sup>3</sup>
density ratio to air	1,1052

For additional safety information see safety data sheet \*-O2-097A

## Valves / Manifolds

Valve connection

200 bar: acc. to national regulations  
300 bar: ISO 5145 Nr. 7:

Recommended Manifolds

Spectrolab FM 51 / FM 52exact



Specification / receptacles					
		Oxygen 4.5	Oxygen 5.0	Oxygen 5.5	
<b>Composition</b>					
O <sub>2</sub> incl. noble gases	≥	99.995	99.999	99.9995	Vol.-%
<b>Impurities</b>					
N <sub>2</sub>	≤	20	5	1.3	ppmv
HC (as CH <sub>4</sub> )	≤	0.5	0.2	0.1	ppmv
CO + CO <sub>2</sub>	≤	0.5	0.4	0.2	ppmv
H <sub>2</sub> O	≤	5	2	0.5	ppmv
<b>Cylinder / Contents</b>					
F 10 200 bar		2.1	2.1	2.1	m <sup>3</sup>
F 50 200 bar		10.7	10.7	10.7	m <sup>3</sup>
F 50*12 200 bar		128.3	128.3	128.3	m <sup>3</sup>

## Remarks

Applications:

Oxidizing gas for special analytical processes (e.g. total organic carbon [TOC])  
Oxidizing gas also in automotive industries for analysis of hydrocarbon emissions.

Contents in m<sup>3</sup> at 15°C, 1 bar

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**Description**

Colourless, odorless, oxidizing gas. Liquid Oxygen is slightly blue coloured. May react violently with organic materials, e.g. grease and oil, even at room temperature.

**Materials**

Cylinders and valves: copper, brass, stainless steel, (steel)  
Use no oil or grease! Valves have to be proofed for heatresistance under working conditions.  
Seals: acc. to applicability test (PTFE)

Physical Properties			
molecular weight	31,9988 kg/mol	vapour pressure at 20°C	
critical point		gas density at 0°C and 1,013 bar	1,429 kg/m <sup>3</sup>
temperature	154,481 K	density ratio to air	1,1052
Pressure	50,422 bar	gas density at 15°C and 1 bar	1,337 kg/m <sup>3</sup>
density	0,4361 kg/l	conversion factor	
triple point		liquid at Ts to m <sup>3</sup> gas (15°C, 1 bar)	
temperature	54,359 K	virial coefficient	
Pressure	0,00149 bar	Bn at 0°C	-0,97*10 <sup>-3</sup> bar <sup>-1</sup>
boiling point		B30 at 30°C	-0,60*10 <sup>-3</sup> bar <sup>-1</sup>
temperature	90,19 K; -183 °C	gaseous state at 25°C and 1 bar	
liquid density	1,1410 kg/l	specific heat capacity cp	0,9196 kJ/kg K
evaporation heat	212,5 kJ/kg	thermal conductivity	261,5*10 <sup>-4</sup> W/m K
		dynam. viscosity	20,5*10 <sup>-6</sup> Ns/m <sup>2</sup>