رقيط للغازات الصناعية
Rakeeth Industrial Gases

Oxygen (O2, R-732)

CAS: 7782-44-7 EC: 231-956-9 UN: 1072 (Compressed); 1073 (Refrigerated liquid)

Oxygen HiQ 5,0								
Purity (%)	99,999							
Impurities (ppm)	N_2 3	C_nH_m	0,5	H_20	3	H_2	3
Typical Filling Pressure	20ºC: 200 bar(a)							

Characteristics

- Colourless and odourless gas
- Many materials burn in oxygen that do not normally burn in air
- Reduces the flash-point temperature and increases the combustion speed.

Health Risks

- Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsions.

Transport

ADR Class 2, 20 

DOT Class 2,2 

Product Description	Size (kg)	Grade	Material Number	Valve Connection	Recommended Regulator
Oxygen HiQ 5.0	14	Ultra-high Purity	509304-SE-C	5/8” BSP RH Int	W019110 or W019210
Oxygen PCC	168	Uncertified	509101-PA-N	5/8” BSP RH Int	W019110 or W019210
Oxygen EP Grade N2.7	14	Pharmaceutical Grade	509206-SE-C	5/8” BSP RH Int	W019110 or W019210
Oxygen IG	12,3	Instrument	509203-SE-C	5/8” BSP RH Int	W019110 or W019210

Physical Data	
Molecular Weight	31,999
Boiling Point at 1,013 bar [°C]	-182,98
Density at 1,013 bar, 20°C [kg/m3]	1,332
Vapour Pressure at 0°C [bar]	-
Vapour Pressure at 20°C [bar]	-
Flammability Range in Air [% volume]	Non-combustible
Specific Volume at 1,013 bar, 20°C [m3/kg]	0,751

Material Compatibility

Aluminium	Buna® N	Brass	Butyl rubber	Carbon steel	Copper	Kel-F®	Monel®	Neoprene®	Nylon®	Polythene	PVC	Stainless steel	Teflon®	Viton®
●		●		●	●	●	●		●	●	●	●	●	

Legend: ● Good | Fair ■ Avoid

Source

from an air separation plant through a secondary

- Oxygen is obtained on a commercial scale by the liquefaction and subsequent distillation of air. For very high purity oxygen, it is normally necessary to take the product

purification and distillation stage. Alternatively, high purity oxygen may be produced by the electrolysis of water. Lower purities of oxygen can also be produced with membrane technique.

Applications

- Many oxidation reactions in the chemical industry use pure oxygen rather than air in order to benefit from higher reaction rates, easier product separation, higher yields or smaller equipment size.
- High purity oxygen is used for the formation of silicon dioxide and metal oxide, as an etchant for photoresist and in mixtures with halocarbons for etching silicon. Oxygen is also used in conjunction with hydrogen to fuel torches for welding, brazing, glass blowing and tube sealing a variety of electronic components such as reed relay switches.
- High purity oxygen is used in conjunction with high purity methane in Advanced Gas Cooled (AGR) nuclear reactors to maintain an appropriate carbon balance in the CO_2.
- Gas coolant in the nuclear core.
- High purity oxygen is used in the optical fibre production process.
- Injecting oxygen into sewage treatment plants accelerates the decomposition of sewage.
- Oxygen is used for chemical synthesis.
- Oxygen is used to supplement or replace air in burners used in many different industries in order to obtain increased temperatures. Typical applications are found in the steel, non-ferrous, glass and concrete industries, amongst many others.
- Oxygen is used for flame sealing of glass ampuls for finished products for the pharmaceutical industry and the chemical industry.
- Oxygen is used for enrichment of air during fermentation.
- Mixed with other gases, oxygen serves in the production of breathable atmospheres (O_2 + CO_2: reanimation; O_2 + He or O_2 + N_2: underwater diving).
- Oxygen is used in some cases for modified atmosphere packaging (MAP) of food stuffs. It is used in mixtures with carbon dioxide and/or nitrogen.