Liquid Oxygen, Industrial Quality

Application

The industrial quality of liquid oxygen is used within a number of different industrial areas. Oxygen can be used instead of air, so that the temperature is raised in combustion and chemical reactions - and biological processes are considerably accelerated. In general the speed of a process is accelerated and therefore also the capacity, by exchanging oxygen for air. This is done in the metal working industry in connection with cutting, laser cutting and plasma cutting.

Metal foundries use “Oxyfuel” technology to raise the furnace temperature and so reducing the melting time. Industrial oxygen is also used within sewage processing to increase the capacity of biological purification plants.

Physical properties

Liquid oxygen is a slightly bluish liquid, which is a little heavier than water. As a gas it is colour- and tasteless as well as odourless. Oxygen is not inflammable in itself, but the substance will greatly nourish fire. Atmospheric air contains 20,94 vol. % oxygen and oxygen gas is approx. 1,1 times as heavy as air, and is easily soluble in both water and alcohol. Oxygen is strongly oxidizing and reacts intensely in connection with inflammable substances, during heat development, ignition or explosion. It makes connections in the form of oxides with almost all elements except halogens, noble gases and noble metals. Oxidation is attended by emission of heat and light, and many reactions demand the presence of water or are accelerated by the help of a catalyst. Liquid oxygen is produced from air via distillation in an air separation system.

Specification

Material No. 101981. Product name: Liquid Oxygen, Industrial Quality

Purity	Impurities
Oxygen (O_2) ≥ 99,5 vol. %	Water (H_2O) ≤ 25 ppm

The specifications are exclusively valid for deliveries in pressure tanks.

Physical data

Gas type	Boiling point	Latent heat of vaporization	Specific heat capacity (15 °C)
Oxygen, O_2, LOX	−183 °C	213 kJ/kg	0,92 kJ/kg K

Conversion factors	Critical values
1 nm^3=1,148 litre = 1,311 kg	Critical temperature −118,6 °C
1 litre = 0,871 nm^3 = 1,142 kg	Critical pressure 5043 KPa
1 kg = 0,763 nm^3 = 0,876 litre	Critical density 0,436 kg/l
1 nm^3=1 m^3 at 15 °C and 0,98 KPa.	*The litre-designation is used for gas in its liquid phase.*

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