Liquid Nitrogen, Process Quality

Application

This quality is mainly utilized in connection with industrial productions within the process industry. The typical areas are: heat treatment of metal, the chemical industry as well as the polymeric industry.

Nitrogen is often used for inerting to avoid oxidation of final products or to eliminate a fire or explosion danger. The nitrogen is also used within certain parts of the process industry.

Physical properties

Liquid Nitrogen is a colourless and odourless liquid, which is lighter than water. As a gas it is colourless-tasteless as well as odourless. Nitrogen is neither inflammable in itself, nor will the substance nourish fire. Atmospheric air contains 79,09 vol. % nitrogen, and nitrogen gas is a little lighter than air. Nitrogen is easier soluble in water. Nitrogen is inert, except at high temperatures, where it reacts with few active metals, e.g. lithium, magnesium and titanium, and forms nitrides. It creates nitric oxide and nitrogen dioxide in reaction with oxygen, ammonia with hydrogen and nitrogen sulphide with sulphur. Liquid nitrogen is produced from air via distillation in an air separation system.

Specification

Material No. 101885. Product name: Liquid Nitrogen, Process Quality

Purity	Impurities
Nitrogen (N_2) (incl Ar) ≥ 99,996 vol. %	Oxygen (H_2O) ≤ 5 ppm
	Water (H_2O) ≤ 5 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)
Nitrogen, N_2, LIN	−196 °C	198 kJ/kg	1,04 kJ/kg K

Conversion factors	Critical values
1 nm^3=1,419 litre = 1,148 kg	Critical temperature −147,1 °C
1 litre = 0,705 nm^3 = 0,808 kg	Critical pressure 33,9 bar
1 kg = 0,872 nm^3 = 1,237 litre	Critical density 0,311 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.*

Linde Gas
www.linde-gas.no

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