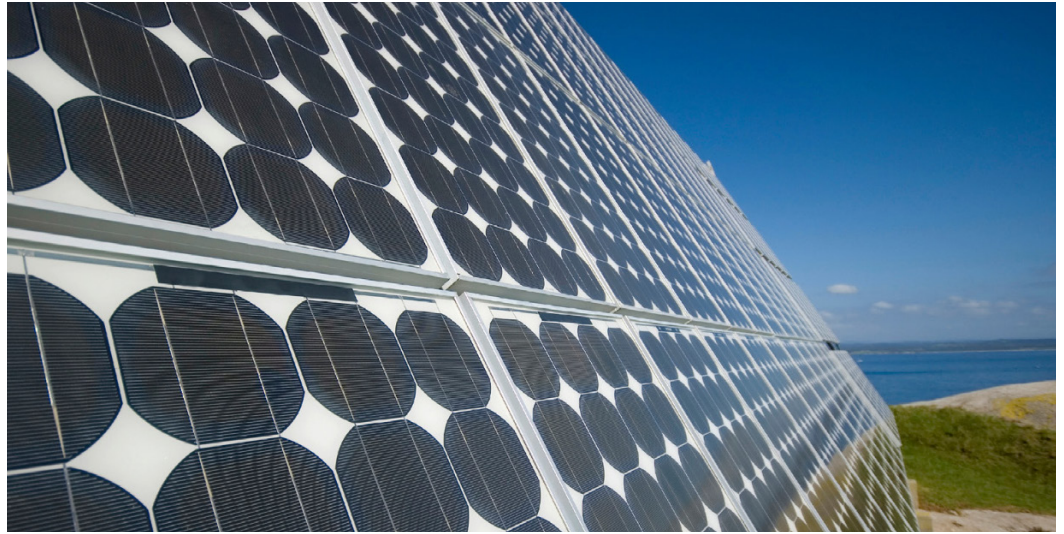




# Liquid Nitrogen, High Tech Quality



**Application** This quality is principally used in connection with high-quality production of electronics, microelectronics, optical fibres, high-purity chemical production plus for laboratory purposes.

**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. 105327. Product name: Liquid Nitrogen, High Tech Quality

Purity	Impurities
Nitrogen (N <sub>2</sub> , incl Ar) ≥ 99,999 vol. %	Oxygen (H <sub>2</sub> O) ≤ 3 ppm
	Water (H <sub>2</sub> O) ≤ 3 ppm
	Carbon monoxide (CO) ≤ 1 ppm
	Carbon dioxide (CO <sub>2</sub> ) ≤ 2 ppm
	Hydrocarbons (C <sub>n</sub> H <sub>m</sub> ) ≤ 1 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 <sub>2</sub> , LIN	-196 °C	198 kJ/kg	1,04 kJ/kg K

Conversion factors	Critical values
1 nm <sup>3</sup> = 1,419 litre = 1,148 kg	Critical temperature -147,1 °C
1 litre = 0,705 nm <sup>3</sup> = 0,808 kg	Critical pressure 33,9 bar
1 kg = 0,872 nm <sup>3</sup> = 1,237 litre	Critical density 0,311 kg/l
1 nm <sup>3</sup> = 1 m <sup>3</sup> at 15 °C and 0,98 KPa.	<i>The litre-designation is used for gas in its liquid phase.</i>

Linde Gas  
www.linde-gas.no