



# BIOGON® Food-grade gases

## BIOGON® N (E 941) gaseous nitrogen (nitrogen, N<sub>2</sub>)



**Application area** Gaseous nitrogen is used in food packaging. Nitrogen can be used in pre-mixed, tailored packaging gases or as pure nitrogen, depending on the product and purpose. The fact that nitrogen is inert means that no chemical compounds occur with the products. Nitrogen is mainly used to displace the oxygen in the air. This prevents oxidation and microbiological changes in the products. Secondary nitrogen helps to create a buffer around the product so that the bag does not collapse during distribution and sale.

When storing and bottling, for example, juice, jam and oils, nitrogen gas is used for inerting to increase shelf life, avoid oxidation of flavors and for color stabilization. The gas bottles with food gases are green and easy to recognize. The color code on the bottle neck distinguishes the different gases. Our food gases meet all EU requirements and are traceable.

### Product specification **BIOGON N (E 941). Gaseous nitrogen (nitrogen, N<sub>2</sub>)**

Product name	Purity	Impurities		Odor, taste	Cylinder size	Content	Material- number
	vol %	unit ppm					
	N <sub>2</sub>	H <sub>2</sub> O	O <sub>2</sub>				
BIOGON® N	≥99,95	≤20	≤20	None	20 l	3,9 m <sup>3</sup>	108529
BIOGON® N	≥99,95	≤20	≤20	None	50 l	9,7 m <sup>3</sup>	106284
BIOGON® N	≥99,95	≤20	≤20	None	12x50 l	116,6 m <sup>3</sup>	108536

All BIOGON® products comply with Swedish and European food legislation requirements. These include regulations such as (EC) No 852/2004, Regulation (EC) No 178/2002, Regulation (EC) No 1333/2008, and Regulation (EC) No 231/2012. The gases in the BIOGON® product group contain no allergens. No genetically modified organisms (GMOs) are involved in the manufacturing process of BIOGON® gases.

**Properties and Origin** Nitrogen gas is colorless, tasteless and odorless. Nitrogen is not flammable and cannot support combustion. Atmospheric air contains nitrogen 78.09 vol% and nitrogen gas is lighter than air. Nitrogen has little water solubility and dissolves in the water phase in food. Nitrogen is inert and does not react with the products. The raw material liquid nitrogen is extracted from air by distillation in an air separation plant.

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<b>Physical data</b>	Type of gas/designation	Nitrogen, N <sub>2</sub>	
	Boiling point	-196 °C	
	Vapoization, 1 bar	199 kJ/kg	
	Heat capacity (15 °C)	1,04 kJ/kg K	
	Conversion factors	1 Nm <sup>3</sup> = 1,419 l	= 1,148 kg
		1 l = 0,705 Nm <sup>3</sup>	= 0,808 kg
		1 kg = 0,872 Nm <sup>3</sup>	= 1,237 l
	Critical values	<u>Critical temperatur</u>	-147,1 °C
		<u>Critical pressure</u>	33,9 bar
		<u>Critical density</u>	0,311 kg/l

1 Nm<sup>3</sup> = 1 m<sup>3</sup> at 15 °C, 1 atm (technical atmosphere). The liter designation is used for gas in liquid phase.

**Safety** Linde is committed to maintaining a high level of safety and protection for both personnel and the environment. Please review our safety data sheets before using the product, available on [linde.se](http://linde.se)

**Delivery form** Chilled liquid.

[linde.se](http://linde.se)

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