



## Liquid Nitrogen (medical device product). CE-marked Liquid Nitrogen.

### Intended Purpose

Liquid Nitrogen (medical device product) may be used for the following application:

- Freezing agent for cryosurgery by local or topical application, directly or by using a specific medical device.
- Cooling agent for cryopreservation of human cells and tissue with the intention of reimplantation or re-use in humans.

The use is limited to appropriately qualified healthcare professionals.

### Intended clinical benefits

Intended clinical benefits of liquid nitrogen (medical device product) as freezing agent for cryosurgery depend on its inherent cryogenic property. It is intended for freezing or ablation of cells and/or tissue by causing freeze necrosis/topical destruction of the applied tissue, e.g. warts, and superficial tumors.

Liquid Nitrogen (medical device product) as cooling agent for cryopreservation of biological samples for medical procedures is intended to be used to decrease the temperature, freeze the biological material for transport and long time storage, as storing biological material like cells/stem cells, tissues, blood, semen et cetera.

### Intended use environment

Health care offices or institutions and tissue storage facilities.

### Maintenance and Traceability

Liquid Nitrogen (medical device product) is delivered either pre-filled in a dewar owned by Linde Healthcare or from a tanker truck to a stationary tank.

Linde Healthcare rents out the dewar or tank and is responsible for ensuring that service and maintenance are carried out according to applicable guidelines. The dewars are individually marked with a barcode and label, which guarantees full traceability. Liquid Nitrogen (medical device product) has a shelf life of 50 days.

### Physical properties

Liquid nitrogen is a colorless, odorless, inert and nonflammable cryogenic liquid. Its intended effects are based solely on its extremely low temperature. At ambient conditions it rapidly vaporizes, expanding to gaseous nitrogen and potentially displacing oxygen in poorly ventilated areas. Liquid nitrogen is produced from ambient air by cryogenic distillation in an air separation unit. The quality specifications comply with the European Pharmacopoeia monograph for nitrogen (1247) and internal Linde quality standards.



| Technical 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

1 nm<sup>3</sup> = 1,419 liter = 1,148 kg1 liter = 0,705 nm<sup>3</sup> = 0,808 kg1 kg = 0,872 nm<sup>3</sup> = 1,237 liter

## Critical values

Critical temperature -147,1 °C

Critical pressure point 33,9 bar

Critical density 0,311 kg/l

1 nm<sup>3</sup> = 1 m<sup>3</sup> at 15 °C and 0,98 KPa. The litre-designation is used for gas in its liquid phase.Linde Healthcare  
article numbers

| Article number | Description                                   |                                         |
|----------------|-----------------------------------------------|-----------------------------------------|
| 123687         | LIQUID NITROGEN (MEDICAL DEVICE) 180L 1,5 BAR |                                         |
| 123686         | LIQUID NITROGEN (MEDICAL DEVICE) 230L 1,5 BAR |                                         |
| 123685         | LIQUID NITROGEN (MEDICAL DEVICE) 180L 4 BAR   |                                         |
| 123684         | LIQUID NITROGEN (MEDICAL DEVICE) 230L 4BAR    |                                         |
| 123701         | LIQUID NITROGEN (MEDICAL DEVICE)              | bulk filling to tank                    |
| 124271         | LIQUID NITROGEN (MEDICAL DEVICE) FILL (L)     | on site filling to customer owned dewar |



CE 0197

## Customer support

Linde Healthcare customer support:  
healthcare.se@linde.com  
Telephone +46 8-731 18 00

More information about us and our products and services can be found at [linde-gas.se](http://linde-gas.se)

## Linde Gas AB

Linde Healthcare, Rättarvägen 3, SE-169 68 Solna  
Telephone +46 8 731 10 00, [linde-gas.se](http://linde-gas.se)

Linde is a company name used by Linde plc and its affiliates. The Linde logo and the Linde word are trademarks or registered trademarks of Linde plc or its affiliates.  
© Copyright 2026, Linde plc.

## Living Healthcare