

**1. Identification**

Product Identifier : Nitrogen  
Other means of identification : Nitrogen, Nitrogen gas, N2, UN 1066  
Product use : Synthetic, Analytical chemistry  
Supplier : Leland Limited, Inc.  
2614 South Clinton Ave.  
South Plainfield, NJ 07080  
1-908-561-2000 (8-4 EST)  
  
Emergency calls  
Hazmat Service Inc. : 1-800-373-7542 (Domestic)  
Contract #1264 : 1-484-951-2432 (International)

**2. Hazards Identification**

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200).  
  
Classification of the substance or mixture : Gases under pressure – Compressed gas  
Simple asphyxiant

GHS label elements

Hazard pictograms :



Signal word : Warning  
Hazards statements : Contains gas under pressure; may explode if heated  
May displace oxygen and cause rapid suffocation  
May increase respiration and heart rate

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position.  
  
Prevention : Use and store outdoors or in a well ventilated place.  
Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.  
  
Storage : Protect from sunlight when ambient temperature exceeds 40C/104F. Store in a well-ventilated place.  
  
Disposal : Dispose in accordance with all applicable regulations.  
Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

### 3. Composition, Information on Ingredients

Substance/Mixture	: Substance
Chemical Name	: Nitrogen
Synonyms	: Nitrogen, Nitrogen gas, N2, UN 1066
CAS Number	: 7727-37-9
Content (vo%)	: 99.5 % or more

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### 4. First Aid Measures

Description of necessary first aid measures

Inhalation	: Remove exposed person to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin Contact	: Nitrogen is harmless at atmospheric pressure. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye Contact	: Nitrogen is harmless at atmospheric pressure. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Ingestion	: Since this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin Contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Eye Contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Ingestion	: As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Inhalation	: No specific data.
Skin Contact	: No specific data.
Eye Contact	: No specific data.
Ingestion	: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

## 5. Fire Fighting Measures

Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.
- Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Hazardous thermal decomposition products : Decomposition products may include the following materials:  
Nitrogen oxides
- Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters : Fire-fighters should wear appropriate equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill : Stop leak if without risk.
- Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for

waste disposal.

## 7. Handling and Storage

Precautions for safe handling

Protective measures

Contains gas under pressure. Avoid discharging cartridge into eyes, skin and clothing. Avoid breathing gas. Empty cartridges do not retain product residue.

Advice on general  
occupational hygiene

Do not inhale contents of cartridge or cylinder.

Conditions for safe storage,  
including any  
incompatibilities

Store away from a heat source. Do not heat over 160F(71C)

## 8. Exposure Controls and Personal Protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Nitrogen	Oxygen Depletion [Asphyxiant]

Appropriate engineering  
controls

: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure  
control

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical

Eye/Face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin protection	: Glove to provide thermal barrier to a cold cartridge or cylinder.
Hand protection	Protect hands with a glove if handling a discharging cylinder or cartridge.
Body protection	: None
Other skin protection	None
Respiratory protection	: If in a confined space, use SCBA

## 9. Physical and Chemical Properties

### Appearance

Physical state	: Gas [Compressed gas]
Color	: Colorless
Molecular weight	: 28.02 g/mol
Molecular formula	: N <sub>2</sub>
Boiling/condensation point	: -196C (-320.8F)
Melting/freezing point	: -210.01C (-346F)
Critical temperature	: -146.95C (-232.5F)
Odor	: Odorless
Odor threshold	: Not available.
pH	: Not available.
Flash point	: [Product does not sustain combustion.]
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.

Vapor pressure	: Not available
Vapor density	: 0.967 (Air = 1), Liquid Density@BP: 50.46 lb/ft <sup>3</sup> (808.3 kg/m <sup>3</sup> )
Specific Volume	: 13.8889 ft <sup>3</sup> /lb
Gas Density	: 0.072 lb/ft <sup>3</sup>
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in Water	: Not available.
Partition coefficient: n-octanol/water	: 0.67
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not applicable.

## 10. Stability and Reactivity

Reactivity	: No specific test data related to reactivity is available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

## 11. Toxicological Information

### Information on toxicological effects

Acute toxicity	: Not available.
Irritation / Corrosion	: Not available.
Sensitization	: Not available.
Mutagenicity	: Not available.
Carcinogenicity	: Not available.
Reproductive toxicity	: Not available.
Teratogenicity	: Not available.
Specific target organ toxicity (single exposure)	: Not available.
Specific target organ toxicity (repeated exposure)	: Not available.
Aspiration hazard	: Not available.
Information on the likely routes of exposure	: Not available.

## Potential acute health effects

- Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.  
Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.  
Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.  
Ingestion : Since this product is a gas, refer to the inhalation section.

## Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact : No specific data.  
Inhalation : No specific data.  
Skin contact : No specific data.  
Ingestion : No specific data.

## Delayed and immediate effects and also chronic effects from short and long term exposure

## Short term exposure

- Potential immediate effects : Not available.  
Potential delayed effects : Not available.

## Long term exposure

- Potential immediate effects : Not available.  
Potential delayed effects : Not available.

## Potential chronic health effects – Not available.

- General : No known significant effects or critical hazards.  
Carcinogenicity : No known significant effects or critical hazards.  
Mutagenicity : No known significant effects or critical hazards.  
Teratogenicity : No known significant effects or critical hazards.  
Developmental effects : No known significant effects or critical hazards.  
Fertility effects : No known significant effects or critical hazards.

## Numerical measures of toxicity

- Acute toxicity estimates : Not available.

**12. Ecological Information**

- Toxicity : Not available.  
Persistence and degradability : Not available.

## Bioaccumulative potential

Product/Ingredient name	Log P <sub>ow</sub>	BCF	Potential
Nitrogen	0.67	-	low

## Mobility in soil

- Soil/Water partition coefficient (K<sub>oc</sub>) : Not available.  
Other adverse effects : No known significant effects or critical hazards.

**13. Disposal Considerations**

- Discharge of Nitrogen : Gradually release in open air.
- Disposal of Cylinders : If gas remains in cylinders, release gas with proper equipment and dispose of cylinders as incombustible waste.  
For empty cylinders, check for a puncture hole and dispose of as incombustible waste.  
Do not dispose of cylinders without first checking that all gas has been released.

**14. Transport Information for Leland 89 & 99 Series large cylinders >114ml Water Capacity**

DOT / IMDG : Nitrogen, Compressed

Shipping Name

UN Number : UN 1066

Hazard Class (Division) : 2 (2.2)

Placard (When required) : Nonflammable gas



Special Shipping Information : See CFR 49, 172.101, 173.306 for exceptions of labeling.

IMDG / IMO : Receptacles, small containing gas (Gas Cartridge < 50ml)

Proper Shipping Name

UN Number : UN 2037

Hazard Class (Division) : 2 (2.2)

Special Provision : See Code 191

IATA : Nitrogen

Proper Shipping Name : Receptacles, small containing gas

UN Number : UN 2037

Hazard Class (Division) : 2 (2.2)

Special Provision : See Code A98

**SHIPPING AND LOGISTICS ASSISTANCE**

Please contact [Logistics@LelandGas.com](mailto:Logistics@LelandGas.com)



**14A. Transportation Information for Leland Puncture Type Cartridges <114ml water capacity.**

DOT Shipping Name: Limited Quantity (Authorized by CFR 49 Sec 173.306)  
UN Number Not Applicable (Excepted per 49 CFR 173.306)  
Hazard Class Not Applicable  
Carton Marking

**Special Notes Regarding Transportation:**

All N2 filled cartridges less than 114 ml of water capacity offered for ground transportation qualify for the exceptions provided in 49CFR 173.306 so that the proper shipping name of "Limited Quantity" may be used for shipping papers and carton identification labels.

All Leland product drawings indicate the cartridge or cylinder internal water volume.

IATA/IACO/FedEx/UPS each have their own unique requirements regarding transportation of N2 filled cartridges of less than 114ml of water capacity. With a few limited exceptions, cartridges filled with N2 less than 114ml of water capacity need to be offered as Nitrogen, UN1066.

49CFR requires that employers shall provide specific training/certification for employees who handle and offer Dangerous Goods for any mode of transportation.

**15. Regulatory Information**

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

U.S. Federal Regulations	:	None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.		
SARA 311/312	:	Fire hazard	:	No
Hazardous Categories	:	Sudden release of pressure	:	Yes
	:	Reactive	:	No
	:	Immediate (acute) health hazard	:	No
	:	Delayed (chronic) health hazard	:	No

State Regulations	:	Massachusetts	:	This material is listed. Revised 5/20/2025
	:	New York	:	This material is not listed.
	:	New Jersey	:	This material is listed.
	:	Pennsylvania	:	This material is listed.
	:	California	:	This material is not listed.
International Regulations	:	Canada inventory	:	This material is listed or exempted.
	:	Australia inventory (AICS)	:	This material is listed or exempted.
	:	China inventory (IECSC)	:	This material is listed or exempted.
	:	Japan inventory	:	Not determined.
	:	Korea inventory	:	This material is listed or exempted.
	:	Malaysia inventory (EHS Register)	:	Not determined.
	:	New Zealand inventory of Chemicals (NZIoC)	:	This material is listed or exempted.
	:	Philippines inventory (PICCS)	:	This material is listed or exempted.
<b>16. Other Information</b> Hazard Rating Systems	:	Taiwan inventory (CSNN)	:	Not determined.
	:	<b>NFPA Ratings</b>	:	<b>HMIS Ratings</b>
	:	Health = 0	:	Health = 0
	:	Flammability = 0	:	Flammability = 0
	:	Reactivity = 0	:	Physical hazards = 0
	:	Special = SA	:	

## Key to abbreviations

ACGIH	:	American Conference of Governmental Industrial Hygienists
BCF	:	Bioconcentration Factor
CAS	:	Chemical Abstract Services
CERCLA	:	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	:	United States Code of Federal Regulations
DOT	:	Department of Transportation
GHS	:	Globally Harmonized System of Classification and Labeling of Chemicals
IATA	:	International Air Transport Association
IMDG	:	International Maritime Dangerous Goods
IMO	:	International Maritime Organization
Log P <sub>ow</sub>	:	Logarithm of the octanol/water partition coefficient
NIOSH	:	National Institute for Occupational Safety and Health
OSHA	:	Occupational Safety and Health Administration
STEL	:	Short-term Exposure Limit
SARA	:	Superfund Amendments and Reauthorization Act
TLV	:	Threshold Limit Value
TSCA	:	Toxic Substances Control Act
TWA	:	Time Weighted Average

## Notice to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee they are the only hazards that exist.