

### SECTION 1: Identification

#### 1.1 Product Identifier

|                      |                                      |
|----------------------|--------------------------------------|
| Trade name           | Nitrogen                             |
| MSDS No.             | 0072                                 |
| Chemical description | Nitrogen                             |
| CAS No.              | 7727-37-9                            |
| EC No.               | 231-783-9                            |
| Chemical formula     | N <sub>2</sub>                       |
| Synonyms             | LIN, Liquid Nitrogen, Bulk Nitrogen. |

#### 1.2 Relevant identified uses and uses advised against

Inert gas widely used in chemical, food and beverage, petrochemical and metal industriels

#### 1.3 Details of the supplier

|         |   |
|---------|---|
| Name    | Air Liquide New Zealand Limited                           |
| Address | 19 Maurice Road, Penrose<br>Auckland 1061,<br>New Zealand |
| Phone   | Phone: (09) 622 3880                                      |

#### 1.4 Emergency telephone number

0800 156 516

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification according to Hazardous Substances [Classification] Regulations 2001

|                        |   |
|------------------------|---|
| HSNO classification(s) | 2.2 - Not Hazardous<br>Contains gas under pressure; may explode if heated |
|------------------------|---|

Physical Hazards

#### 2.2 Label Elements

Hazard pictograms



|                          |   |
|--------------------------|---|
| Signal word              | Warning   |
| Hazard statements        | H281 Contains refrigerated gas; may cause cryogenic burns or injury   |
| Precautionary statements |   |
| <u>Prevention</u>        | P103 - Read label before use  |
| <u>Response</u>          | P336+P315 - Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention. |
| <u>Storage</u>           | P403 - Store in a well-ventilated place.  |

#### 2.3 Other Hazards

Asphyxiant in high concentrations.

### SECTION 3: Composition/information on ingredients

#### 3.1 Substance/Mixtures

| Name     | Chemical Formula | %   | Product Identifier |
|----------|------------------|-----|--------------------|
| Nitrogen | N <sub>2</sub>   | 100 | (Cas No) 7727-37-9 |
|          |                  |     | (EC No) 231-783-9  |

### SECTION 4: First-aid measures

#### 4.1 Description of first-aid measures

|              |   |
|--------------|---|
| Inhalation   | Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. |
| Skin contact | In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance..  |
| Eye contact  | Immediately flush eyes thoroughly with water for at least 15 minutes.   |
| Ingestion    | Ingestion is not considered a potential route of exposure.  |

#### 4.2 Most important symptoms and effects, both acute and delayed

May displace oxygen and cause rapid suffocation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.

#### 4.3 Indication of any immediate medical attention and special treatment needed

None

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

|                                |                                     |
|--------------------------------|-------------------------------------|
| Suitable extinguishing media   | Water spray or fog.                 |
| Unsuitable extinguishing media | Do not use water jet to extinguish. |

#### 5.2 Specific hazards arising for the substance or mixture

|                               |   |
|-------------------------------|---|
| Specific hazards              | Exposure to fire may cause containers to rupture/explode. |
| Hazardous combustion products | None  |

#### 5.3 Advice for firefighters

|   |   |
|---|---|
| Specific methods                              | Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.<br>If possible, stop flow of product.<br>Use water spray or fog to knock down fire fumes if possible.<br>Move containers away from the fire area if this can be done without risk. |
| Special protective equipment for firefighters | Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper personal protective equipment, including respiratory protection.   |
| Hazchem code                                  | 2T<br>2 Use fog or fine spray.<br>T Wear full fire kit and breathing apparatus. Dilute spill and run-off.   |

### SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Try to stop release.  
Evacuate area.  
Monitor concentration of released product.  
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
Ensure adequate air ventilation.  
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.  
Act in accordance with local emergency plan.  
Stay upwind.

### 6.2 Environmental precautions

Try to stop release.

### 6.3 Methods and material for containment and cleaning up

Ventilate area

### 6.4 References to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

|                                     |   |
|-------------------------------------|---|
| Safe use of the product             | <p>The substance must be handled in accordance with good industrial hygiene and safety procedures.<br/>Only experienced and properly instructed persons should handle gases under pressure.<br/>Consult supplier for specific recommendations.<br/>Consider pressure relief device(s) in gas installations.<br/>Ensure the complete gas system was (or is regularly) checked for leaks before use.<br/>Do not smoke while handling product.<br/>Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.<br/>Do not breathe gas.<br/>Avoid release of product into atmosphere.</p>   |
| Safe handling of the gas receptacle | <p>Refer to supplier's container handling instructions.<br/>Do not allow backfeed into the container.<br/>Protect cylinders from physical damage; do not drag, roll, slide or drop.<br/>When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.<br/>Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.<br/>If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.<br/>Never attempt to repair or modify container valves or safety relief devices.<br/>Damaged valves should be reported immediately to the supplier.<br/>Keep container valve outlets clean and free from contaminants particularly oil and water.<br/>Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.<br/>Close container valve after each use and when empty, even if still connected to equipment.<br/>Never attempt to transfer gases from one cylinder/container to another.<br/>Never use direct flame or electrical heating devices to raise the pressure of a</p> |

container.  
Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.  
Suck back of water into the container must be prevented.

### 7.2 Conditions for safe storage, including any incompatibilities

**General**  
Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place.  
Containers should be stored in the vertical position and properly secured to prevent them from falling over.  
Stored containers should be periodically checked for general condition and leakage.  
Keep container below 50°C in a well ventilated place.  
Segregate from flammable gases and other flammable materials in store.  
Store containers in location free from fire risk and away from sources of heat and ignition.  
Keep away from combustible materials.

Approved handlers/ Location Certificates No requirements

### 7.3 Specific use(s)

None

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

OEL (Occupational Exposure Limits) No data available  
DNEL (Derived-No Effect Level) No data available  
PNEC (Predicted No-Effect Concentration) No data available

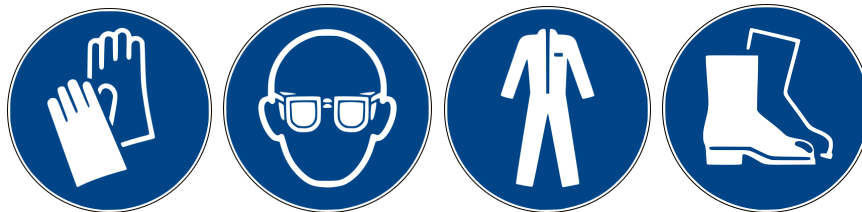
### 8.2 Appropriate engineering controls

Provide adequate general and local exhaust ventilation.  
Systems under pressure should be regularly checked for leakages.  
Ensure exposure is below occupational exposure limits (where available).  
Oxygen detectors should be used when asphyxiating gases may be released.  
Consider work permit system e.g. for maintenance activities.

### 8.3 Individual protection measures

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered:

PPE compliant to the recommended EN/ISO standards should be selected.



Eye/face protection

Wear safety glasses with side shields.

Skin protection

Wear working gloves when handling gas containers.  
Wear safety shoes while handling containers.

|                        |  |
|------------------------|--|
| Respiratory protection | Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. |
| Thermal hazards        | None necessary.  |

### 8.4 Environmental exposure controls

None necessary.

## SECTION 9: Physical and chemical properties

### 9.1 information on basic physical and chemical properties

Appearance

|   |  |
|---|--|
| Physical state 20°C/101.3kPa                    | Gas  |
| Colour  | Colourless   |
| Odour   | No odour warning properties  |
| Odour threshold                                 | Odour threshold is subjective and inadequate to warn of overexposure.                                |
| pH value  | Not applicable   |
| Molar mass [g/mol]                              | 28.01 g/mol  |
| Melting point [°C]                              | -210 °C  |
| Boiling point [°C]                              | -195.8 °C  |
| Flash point [°C]                                | Not applicable for gases and gas mixtures.   |
| Critical temperature [°C]                       | -146.96 °C   |
| Evaporation rate (ether=1)                      | Not applicable for gases and gas mixtures.   |
| Flammability range                              | Non flammable  |
| Vapour pressure [20°C]                          | Not applicable   |
| Vapour pressure [50°C]                          | Not applicable   |
| Relative density, gas (air=1)                   | 0.967  |
| Relative density, liquid (water=1)              | Not applicable   |
| Solubility in water [mg/l]                      | 20mg/l, 1.485g/100cm <sup>3</sup> , 0.0235m <sup>3</sup> /kg, 0.0149cm <sup>3</sup> /cm <sup>3</sup> |
| Partition coefficient n-octanol/water [log Kow] | Not applicable for inorganic gases.  |
| Autoignition temperature                        | Not applicable   |
| Viscosity [20°C]                                | Not applicable   |
| Explosive properties                            | Not applicable   |
| Oxidising properties                            | None   |
| Coefficient of oxygen equivalency (Ci)          | 0  |

### 9.2 Other information

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No reactivity hazard other than the effects described in subsections below.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

None.

### 10.4 Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5 Incompatible materials

None.

### 10.6 Hazardous decomposition products

None

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

|  |   |
|--|---|
| Acute toxicity                                     | No toxicological effects from this product. . |
| Skin corrosion/irritation                          | No known effects from this product.           |
| Serious eye damage/irritation                      | No known effects from this product.           |
| Respiratory/skin sensitisation                     |   |
| Germ cell mutagenicity                             | No known effects from this product.           |
| Carcinogenicity                                    | No known effects from this product.           |
| Toxic for reproduction: Fertility                  | No known effects from this product.           |
| Toxic for reproduction: Unborn child               | No known effects from this product.           |
| Specific target organ toxicity - Single exposure   | No known effects from this product.           |
| Specific target organ toxicity - Repeated exposure | No known effects from this product.           |
| Aspiration hazard                                  | Not applicable for gases and gas mixtures.    |

## SECTION 12: Ecological information

### 12.1 Toxicity

No ecological damage caused by this product.

### 12.2 Persistence and degradability

No ecological damage caused by this product.

### 12.3 Bioaccumulative potential

No ecological damage caused by this product.

### 12.4 Mobility in soil

No ecological damage caused by this product.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

### 12.6 Other adverse effects

|                          |       |
|--------------------------|-------|
| Effect on ozone layer    | None. |
| Effect on global warming | None  |

## SECTION 13: Disposal consideration

### 13.1 Waste treatment methods

Cylinders should be returned to the manufacturer for disposal of contents

Vent to atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous

Discharge to atmosphere in large quantities should be avoided.

### 13.2 Additional information

None.

## SECTION 14: Transport information



### 2.2 Non-flammable, non-toxic gases

#### 14.1 Land transport

Land Transport Rule: Dangerous Goods 2005: NZS 5433:2012

|                            |   |
|----------------------------|---|
| UN Number                  | 1977  |
| UN proper shipping name    | NITROGEN, REFRIGERATED LIQUID   |
| Transport hazard class(es) | 2.2   |
| Transport Restrictions     | C/E - Tank carriage : Passage forbidden through tunnels of category C, D and E.<br>Other carriage : Passage forbidden through tunnels of category E |
| Packing group              | Not applicable  |
| Environmental hazards      | None  |

#### 14.2 Transport by sea

IMDG - International Maritime Dangerous Goods

|                            |                               |
|----------------------------|-------------------------------|
| UN Number                  | 1977                          |
| UN proper shipping name    | NITROGEN, REFRIGERATED LIQUID |
| Transport hazard class(es) | 2.2                           |
| Packing group              | Not applicable                |
| Environmental hazards      | None                          |
| Emergency Schedule (EmS)   | Fire F-C<br>Spillage S-V      |

#### 14.3 Transport by air

ICAO - International Civil Aviation Organisation/IATA - International Air Transport Association

|                            |                               |
|----------------------------|-------------------------------|
| UN Number                  | 1977                          |
| UN proper shipping name    | NITROGEN, REFRIGERATED LIQUID |
| Transport hazard class(es) | 2.2                           |
| Packing group              | Not applicable                |
| Environmental hazards      | None                          |

#### 14.4 Special precautions for user

|                               |   |
|-------------------------------|---|
| Hazchem code                  | 2T  |
| Special transport information | Avoid transport on vehicles where the load space is not separated from the driver's compartment.<br>Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.<br>Before transporting product containers:<br>- Ensure there is adequate ventilation. |

- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture

HSNO approval code HSR001027  
Listed on the New Zealand Inventory of Chemicals (NZIoC)

#### 15.2 Chemical safety assessment

A chemical safety assessment does not need to be carried out for this product.

### SECTION 16: Other information

#### 16.1 Indication of changes

Update to reflect GHS requirements  
Date of first issue May 2014  
Revised date April 2019  
Superseeds Version 9  
Version 10

#### 16.2 Training advice

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

#### 16.3 Full text of H-statements

H281 Contains refrigerated gas; may cause cryogenic burns or injury

#### 16.4 Disclaimer of liability

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.  
Details given in this document are believed to be correct at the time of going to press.  
Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.