1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Nitrogen
Chemical Formula: N₂
Trade Names: Nitrogen, Compressed
Nitrogen, Instrument Grade
Nitrogen, Pharmaceutical Grade
Nitrogen, ELCAP

Colour coding: Compressed, Instrument, ultra high purity & Pharmaceutical Grades have French Grey (H.30) bodies with black shoulders. Relevant decals/scrolling shall be on bodies of cylinders. ELCAP shall have a Protea Pink (A.58) body, with “ELCAP” stencilled on body of the cylinder.

Valve: ELCAP No. 2 type-Brass 5/8inch BSP right hand female. All the other grades shall be fitted with 3 SN – Brass, 3/4 inch BSP right hand female valves.

Company Identification: Les Gaz Industriels Ltd
Pailles Road
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Tel No: (+230) 212-8306
Fax No: (+230) 212-0235

EMERGENCY NUMBER: 1133

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: Nitrogen
Chemical Family: Inert gas
CAS No.: 7727-37-9
UN No.: 1066
ERG No.: 121
Hazchem Warning: 2 C Non-flammable Gas

3 HAZARDS IDENTIFICATION

Main Hazards: All cylinders are portable gas containers, and must be regarded as pressure vessels at all times. Nitrogen does not support life. It can act as a simple asphyxiant by diluting the concentration of oxygen in air below the levels necessary to support life.

Adverse Health Effects: Inhalation of nitrogen in excessive concentrations can result in dizziness, nausea, vomiting, loss of consciousness and death.

Chemical Hazards: Nitrogen is relatively inert to most materials under ordinary conditions. It becomes more reactive at elevated temperatures, and combines with hydrogen, oxygen and some metals.

Biological Hazards: No known effect.

Vapour Inhalation: As nitrogen acts as a simple asphyxiant death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations, unconsciousness and death may occur in seconds without warning.

4 FIRST AID MEASURES

Eye/Skin Contact: No known effect.
Ingestion: (See Section 3 above)
Inhalation: Prompt medical attention is mandatory in all cases of overexposure to Nitrogen. Rescue personnel should be equipped with self-contained breathing apparatus. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be removed to an uncontaminated area, and given mouth-to-mouth resuscitation and supplemental oxygen.

5 FIRE FIGHTING MEASURES

Extinguishing Media: As Nitrogen is an inert gas, it does not contribute to a fire, but could help with the extinguishing by reducing the oxygen content of the air by dilution to below the level to support combustion.

Specific Hazards: Nitrogen does not support life. It can act as a simple asphyxiant by diluting the concentration of oxygen in the air below the levels to support life.

Emergency Actions: If possible, shut off the source of excess Nitrogen. Evacuate area. All cylinders should be removed from the vicinity of the fire. Cylinders that cannot be removed should be cooled with water from a safe distance. Cylinders which have been exposed to excessive heat should be clearly identified and returned to supplier. CONTACT THE NEAREST AFROX BRANCH.

Protective Clothing: Self-contained breathing apparatus. Safety gloves and shoes, or boots, should be worn when handling cylinders.

Environmental Precautions: Nitrogen is lighter than air and disperses rapidly in the atmosphere. Care should be taken when entering a potentially oxygen-deficient environment. If possible, ventilate the affected area.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Do not enter any area where nitrogen has been spilled unless tests have shown that it is safe to do so.

Environmental Precautions: Nitrogen does not pose a hazard to the environment.

Small Spills: Shut off the source of escaping nitrogen. Ventilate the area.

Large Spills: Evacuate the area. Shut off the source of the spill if this can be done without risk. Restrict access to the area until completion of the clean-up procedure. Ventilate the area using forced-draught if necessary.

7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Nitrogen cylinders may be stacked horizontally provided that they are firmly secured at each end to prevent rolling. Use a “first in - first out” inventory system to prevent full cylinders from being stored for excessive periods of time. Keep out of reach of children.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Hazards: As nitrogen is a simple asphyxiant, avoid any areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe.

Engineering Control Measures: Engineering control measures are preferred to reduce exposure to Oxygen-depleted atmospheres. General methods include forced-draught ventilation, separate from other exhaust ventilation systems. Ensure that sufficient fresh air enters at, or near floor level.

Personal Protection: Self-contained breathing apparatus should always be worn when entering areas where oxygen depletion may have occurred. Safety goggles, gloves and shoes or boots should be worn when handling cylinders.

Skin: No known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA
Chemical Symbol: N₂
Molecular Weight: 28.013
Specific Volume @ 20°C & 101,325 kPa: 861.5 m³/g
Density, gas @ 101,325 kPa and 20°C: 1.25 kg/m³
Relative density (Air = 1) @ 101,325 kPa: 0.967
Colour: None
Taste: None
Odour: None

10 STABILITY AND REACTIVITY

Conditions to avoid: The dilution of the oxygen concentration in the atmosphere to levels which cannot support life. Never use cylinders as rollers or supports,
Ref. No.: MS095
or for any other purpose than the storage of Nitrogen. Never expose
cylinders to excessive heat, as this may cause sufficient build-up of
pressure to rupture the cylinders.

Incompatible Materials
As Nitrogen is inert it may be contained in systems constructed of
any of the common metals which have been designed to safely
withstand the pressures involved.

Hazardous Decomposition Products
None

11 TOXICOLOGICAL INFORMATION

Acute Toxicity No known effect
Skin & eye contact No known effect
Chronic Toxicity No known effect
Carcinogenicity No known effect
Mutagenicity No known effect
Reproductive Hazards No known effect
(For further information see Section 3. Adverse Health effects)

12 ECOLOGICAL INFORMATION

Nitrogen is lighter than air and can cause pockets of oxygen depleted
atmosphere in low-lying areas. It does not pose a hazard to the
ecology.

13 DISPOSAL CONSIDERATIONS

Disposal Methods
Small amounts may be blown to the atmosphere under controlled
conditions. Large amounts should only be handled by the gas
supplier.

Disposal of Packaging
The disposal of cylinders must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION
UN No 1066
ERG No 121
Hazchem warning 2C Non-flammable Gas

SEA TRANSPORTATION
IMDG 1066

AIR TRANSPORTATION
ICAO/IATA Code 1066
Class 2.2
Packaging group
Packaging instructions
- Cargo 200
- Passenger 200
Maximum quantity allowed
- Cargo 150kg
- Passenger 75kg

15 REGULATORY INFORMATION

EEC Hazard class Non-flammable

<table>
<thead>
<tr>
<th>Risk Phrase</th>
<th>Description</th>
<th>Safety Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R20</td>
<td>Harmful by inhalation</td>
<td>S2</td>
<td>Keep out of reach of Children</td>
</tr>
<tr>
<td>R44</td>
<td>Risk of explosion if heated under confinement</td>
<td>S9</td>
<td>Keep container in a well-ventilated place</td>
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<tr>
<td></td>
<td></td>
<td>S15</td>
<td>Keep way from heat</td>
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<tr>
<td></td>
<td></td>
<td>S37</td>
<td>Wear suitable gloves</td>
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<tr>
<td></td>
<td></td>
<td>S38</td>
<td>In case of insufficient ventilation, wear suitable respiratory equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S51</td>
<td>Use only in well-ventilated areas</td>
</tr>
</tbody>
</table>

National legislation None
Refer to SABS 0265 for explanation of the above.

16 OTHER INFORMATION

Bibliography
Compressed Gas Association, Arlington, Virginia
Handbook of Compressed Gases – 3rd Edition
Matheson, Matheson Gas Data Book – 6th Edition
SABS 0265 - Labelling of Dangerous Substances

17 EXCLUSION OF LIABILITY

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