CARBON DIOXIDE, Solid (CO2), Dry Ice LNS201

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

| Trade name | : CARBON DIOXIDE, Solid (CO2), Dry Ice |
| MSDS Nr | : LNS201 |
| Use | : Freezing applications. Medical applications. Scientific Applications. Special effects. |
| Chemical formula | : CO2 |
| Company identification | : Liquid Nitrogen Services Pty Ltd |

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Emergency phone nr : 0419 313 713

2 HAZARDS IDENTIFICATION

Hazard classification : Classified as a dangerous good by the criteria of the ADG code. Not classified as hazardous according to NOHSC criteria.

Hazard identification : Refrigerated solidified gas. Contact with product may cause cold burns or frostbite. In high concentrations may cause asphyxiation. Closed containers may generate internal gas pressure, causing containers to rupture/explode.

3 COMPOSITION /INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Preparation</th>
<th>Contents</th>
<th>CAS No</th>
<th>EC No</th>
<th>Annex No</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (solid)</td>
<td>100 %</td>
<td>124-38-9</td>
<td>204-696-9</td>
<td>——</td>
<td></td>
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</tbody>
</table>

Contains no other components or impurities which will influence the classification of the product.

4 FIRST AID MEASURES

First aid measures

- Inhalation : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO2 cause increased respiration and headache. 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/eye contact : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

- Ingestion : Potential choking hazard exists for dry ice pellets to lodge in the airway if swallowed. Seek urgent medical advice.

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5 FIRE-FIGHTING MEASURES

Specific hazards: Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products: None.
Extinguishing media:
- Suitable extinguishing media: All known extinguishants can be used.
Special protective equipment for fire fighters: In confined space use self-contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate area.
Use protective clothing.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Ensure adequate air ventilation.

Environmental precautions: Try to stop release.
Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.

Clean up methods: Ventilate area.

7 HANDLING AND STORAGE

Storage: Minimize exposure to water contacting this material.
Ventilate to prevent pressure build up.
Closed containers may generate internal gas pressure. Ensure lids on containers are loose-fitting to avoid build up of gas pressure.
Keep container below 50°C in a well ventilated place.

Handling: Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Use insulating gloves.
Refer to supplier's container handling instructions.

8 EXPOSURE CONTROLS/PERSOMAL PROTECTION

Personal protection: Ensure adequate ventilation.
Protect eyes, face and skin from contact with product.

Occupational Exposure Limits:
- Carbon dioxide (solid): ILV (EU) - 8 H - [mg/m³]: 9000
- Carbon dioxide (solid): ILV (EU) - 8 H - [ppm]: 5000
- Carbon dioxide (solid): TLV® -TWA [ppm]: 5000
- Carbon dioxide (solid): TLV® -STEL [ppm]: 30000

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20 °C: Gas.
Physical state: Refrigerated solidified gas.
Colour: Colourless.
Odour: No odour warning properties.
Molecular weight: 44
Melting point [°C]: -56.6
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9 PHYSICAL AND CHEMICAL PROPERTIES (continued)

Boiling point [°C] : -78.5 (s)
Critical temperature [°C] : 30
Vapour pressure [20°C] : 57.3 bar
Relative density, gas (air=1) : 1.52
Solubility in water [mg/l] : 2000
Flammability range [vol% in air] : Non flammable.
Other data : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity : Stable under normal conditions.
Water on solid carbon dioxide increases sublimation and greatens the risk of asphyxiation.

11 TOXICOLOGICAL INFORMATION

Toxicity information : In high concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

12 ECOLOGICAL INFORMATION

Ecological effects information : When discharged in large quantities may contribute to the greenhouse effect.
Can cause frost damage to vegetation.
Global warming potential [CO2=1] : 1

13 DISPOSAL CONSIDERATIONS

General : Do not discharge into any place where its accumulation could be dangerous.
Discharge to atmosphere in large quantities should be avoided.
Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

General information
UN No. : 1845
Land transport
H.I. nr : --
Proper shipping name : UN1845 CARBON DIOXIDE, SOLID,
HAZCHEM - Emergency Action Code
- ADG Class : 9
- ADG Classification code : M11 III
- ADR Packing group : III
Sea transport
- IMO-IMDG code : Class 9
- IMO Packing group : III

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14 TRANSPORT INFORMATION (continued)
- IMDG-Marine pollution: -
- Emergency Schedule (EmS) - Fire Air transport: F-C S-V
- ICAO/IATA: Packaging instructions cargo: 904
  Packaging instructions passenger: 904
- Proper shipping name: CARBON DIOXIDE, SOLID
- Class: 9
- IATA Packing group: III
Other transport information: Avoid transport on vehicles where the load space is not separated from the driver's compartment.
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.
Before transporting product containers:
  - Ensure that containers are firmly secured.
  - Ensure there is adequate ventilation.
  - Compliance with applicable regulations.

15 REGULATORY INFORMATION
EC Classification: Not included in Annex I.
Not classified as dangerous preparation/substance

EC Labelling: No EC labelling required.
Symbol(s): None.
R Phrase(s): None.
S Phrase(s): None.

16 OTHER INFORMATION
Asphyxiant in high concentrations.
May cause frostbite.
Keep container in a well-ventilated place.
Do not breathe the gas.
Ensure all national/local regulations are observed.
The hazard of asphyxiation is often overlooked and must be stressed during operator training.
This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

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.

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