



an AIR LIQUIDE Group Company

# SAFETY DATA SHEET

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Revised edition no : 0

Date : 26 / 08 / 2014

Supersedes : 0 / 0 / 0

## Liquid Carbon Dioxide (refrigerated)

### SDS\_018R\_CLP



2.2 : Non-flammable, non-toxic gases

## Warning



### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Trade name : Liquid Carbon dioxide  
 SDS Nr : SDS\_018R\_CLP  
 Chemical description : Carbon dioxide (refrigerated)  
 CAS No :124-38-9  
 EC No :204-696-9  
 Index No :---

Registration-No. : Listed in Annex IV / V REACH, exempted from registration.  
 Chemical formula : CO<sub>2</sub>  
 Use : Industrial and professional. Perform risk assessment prior to use.  
 Company identification : Energas Ltd.  
 Westmorland Street, Hull HU2 0HX,  
 United Kingdom

E-Mail address (competent person) : mark.nugent@energass.co.uk  
 Emergency telephone number : 01482 329333

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

#### 2.2. Label elements

#### 2.3. Other hazards

: Asphyxiant in high concentrations.

### SECTION 3. Composition/information on ingredients

Substance.

Substance name	Contents	CAS No EC No Index No Registration no	Classification(DSD)	Classification(CLP)
Carbon dioxide (refrigerated)	: 100	124-38-9 204-696-9 ----- * 1	Not classified (DSD)	Press. Gas Refrigerated (H281)



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## SECTION 3. Composition/information on ingredients (continued)

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

\* 1: Listed in Annex IV / V REACH, exempted from registration.

\* 2: Registration deadline not expired.

Full text of R-phrases see section 16.

## SECTION 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 CO<sub>2</sub> 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** : Immediately flush eyes thoroughly with water for at least 15 minutes.  
In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- **Ingestion** : Ingestion is not considered a potential route of exposure.

## SECTION 5. Firefighting measures

### Extinguishing media

- **Suitable extinguishing media** : All known extinguishants can be used.
- Specific hazards** : Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products** : None.
- Specific methods** : If possible, stop flow of product.  
Move away from the container and cool with water from a protected position.  
If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire.
- Special protective equipment for fire fighters** : In confined space use self-contained breathing apparatus.

## SECTION 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.
- : Try to stop release.  
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
- Clean up methods** : Ventilate area.

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### SECTION 7. Handling and storage

- General** : Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Potential production of solid CO<sub>2</sub> particles must be ruled out. In order to rule out potential electrostatic discharge production, the system must be adequately grounded.
- Handling** : Suck back of water into the container must be prevented.  
Do not allow backfeed into the container.  
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.  
Refer to supplier's container handling instructions.
- Storage** : Keep container below 50°C in a well ventilated place.

### SECTION 8. Exposure controls/personal protection

#### 8.2. Exposure controls

- Personal protection** : Ensure adequate ventilation.  
Protect eyes, face and skin from liquid splashes.

### SECTION 9. Physical and chemical properties

- Physical state at 20°C / 101.3kPa** : Gas.
- Colour** : Colourless.
- Odour** : No odour warning properties.
- Melting point [°C]** : -56.6
- Boiling point [°C]** : -78.5 (s)
- Critical temperature [°C]** : 30
- Flammability range [vol% in air]** : Non flammable.
- Vapour pressure [20°C]** : 57.3 bar
- Relative density, gas (air=1)** : 1.52
- Relative density, liquid (water=1)** : 1.03
- Solubility in water [mg/l]** : 2000
- Other data** : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
- Molecular weight** : 44

### SECTION 10. Stability and reactivity

- : None.
- : Stable under normal conditions.

### SECTION 11. Toxicological information

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

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### SECTION 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

### SECTION 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.

### SECTION 14. Transport information

**UN number** : 2187

**Labelling ADR, IMDG, IATA**



: 2.2 : Non-flammable, non-toxic gases

#### Land transport (ADR/RID)

**H.I. nr** : 22

**UN proper shipping name** : CARBON DIOXIDE, REFRIGERATED LIQUID

**Transport hazard class(es)** : 2

**Classification code** : 3 A

**Packing group** : P203

**Packing Instruction(s)** : P203

**Tunnel Restriction** : C/E Tank carriage: Passage forbidden through tunnels of category C, D and E; Other carriage:  
Passage forbidden through tunnels of category E

#### Sea transport (IMDG)

**Proper shipping name** : CARBON DIOXIDE, REFRIGERATED LIQUID

**Class** : 2.2

**Emergency Schedule (EmS) - Fire** : F-C

**Emergency Schedule (EmS) - Spillage** : S-V

**Packing instruction** : P203

#### Air transport (ICAO-TI / IATA-DGR)

**Proper shipping name (IATA)** : CARBON DIOXIDE, REFRIGERATED LIQUID

**Class** : 2.2

**Passenger and Cargo Aircraft** : Allowed.

**Packing instruction - Passenger and Cargo Aircraft** : 202

**Cargo Aircraft only** : Allowed.

**Packing instruction - Cargo Aircraft only** : 202

**ADR/RID**

- IMO-IMDG code

- ICAO/IATA

**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.



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## SECTION 14. Transport information (continued)

- Before transporting product containers:
- 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.
  - Ensure there is adequate ventilation.
  - Compliance with applicable regulations.

## SECTION 15. Regulatory information

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

Seveso directive 96/82/EC : Not covered.

## SECTION 16. Other information

- Training advice** : Asphyxiant in high concentrations.  
May cause frostbite.  
Keep container in a well-ventilated place.  
Do not breathe the gas.  
The hazard of asphyxiation is often overlooked and must be stressed during operator training.
- Note** : This Safety Data Sheet has been established in accordance with the applicable European Union legislation.
- DISCLAIMER OF LIABILITY** : 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.  
Details given in this document are believed to be correct at the time of going to press. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

**End of document**