

Carbon Dioxide

CARBON DIOXIDE



WARNING
GAS UNDER PRESSURE
May explode if heated



Label 2.2 : Non
flammable, non toxic
gas.

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

Trade name : Carbon Dioxide
MSDS No. : AL004
Chemical Formula : CO₂
Company Identification : Air Liquide Egypt
Main Office : Polyom Building - 2nd floor
Area 22 - 1st Sector- Road 90 (Downtown)-5th Settlement-
11835 New Cairo-Cairo
Phone No. : +20 2 23221100
FAX : +20 2 25213100

2 HAZARDS IDENTIFICATION

Classification of the substance

- **Physical Hazard** : Gases under pressure - Liquefied gas
- **Health effects** : no acute toxicity

Label Elements

- **Hazard Pictogram**



- **Signal word** : Warning
- **Hazard Statement** : Contains gas under pressure - may explode if heated
- **Precautionary statement** : Store in a well ventilated place

Other Hazard : In high concentration may cause asphyxiation

Carbon Dioxide**3 COMPOSITION / INFORMATION ON INGREDIENTS****Substance / Preparation****: Substance**

<u>Substance Name</u>	<u>Contents</u>	<u>CAS No.</u>	<u>EC No.</u>	<u>Index No.</u>	<u>Classification</u>
Carbon Dioxide	100%	124-38-9	204-696-9	-----	

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

4 FIRST AID MEASURES**First Aid Measures****- Inhalation**

: In high concentration 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

: 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.

5 FIRE FIGHTING MEASURES**Flammable class**

: Non flammable

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.

Specific methods

: If possible stop flow of product. Move away from the container and cool with water from a protected position.

- Special protective equipment

: In confined space use self-contained breathing apparatus

For fire fighters

Carbon Dioxide**6 ACCIDENTAL RELEASE MEASURES**

Personal precautions	: Evacuate area 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 workpits, or any place where its accumulation can be dangerous.
Clean up methods	: Ventilate area.

7 HANDLING AND STORAGE

Storage	: Keep container below 50 degrees C in a well ventilated place.
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.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protection	: Ensure adequate ventilation.
Occupational Exposure Limits	: Carbon dioxide: TLV [©] -TWA [ppm]: 5000 Carbon dioxide: TLV [©] -STEL [ppm]: 30000 Carbon dioxide: OEL (UK)-LTEL [ppm]: 5000 Carbon dioxide: OEL (UK)-STEL [ppm]: 15000 Carbon dioxide : MAK – Getmany [ppm]: 5000

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20 degrees C	: Liquefied Gas
Color	: Colorless

Carbon Dioxide**9 PHYSICAL AND CHEMICAL PROPERTIES (continued)**

Odor	: No odor warning properties
Molecular Weight	: 44
Melting point (degrees C)	: -56.6
Boiling point (degrees C)	: -78.5(s)
Critical temperature (degrees C)	: 30
Vapour pressure, 20 degrees C	: 57.3 bar
Relative density, gas (air =1)	: 1.52
Relative density, liquid (water = 1)	: 0.82
Solubility in water [mg/l]	: 2000
Flammability range [vol% in air]	: Non flammable
Other data	: Gas/vapor 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.
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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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12 ECOLOGICAL INFORMATION

Ecological effects information	: When discharged in large quantities may contribute to the greenhouse effect.
Global warming factor [co2=1]	: 1

Carbon Dioxide**13 DISPOSAL CONSIDERATIONS****General**

: Do not discharge into any place where its accumulation could be dangerous.

To atmosphere in a well ventilated place.

Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

UN No. : 1013

H.I. nr : 20

ADR / RID

○ **Proper shipping name** : Carbon Dioxide

○ **ADR Class** : 2

○ **ADR / RID Classification code** : 2 A

○ **Labelling ADR**



: Label 2.2: Non flammable, non toxic gas.

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 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

Carbon Dioxide**15 REGULATORY INFORMATION**

EC Classification	: Not included in Annex I. Not classified as dangerous preparation / substance
EC Labelling	: No EC labeling required.
- Symbol (s)	: None
- R Phrase (s)	: None
- S Phrase (s)	: None

16 OTHER INFORMATION

- Asphyxiant in high concentrations.
- Keep container in a well – ventilated place.
- Do not breathe the gas.
- Contact with liquid may cause cold burns/frostbite.
- Ensure all national / local regulations are observed.
- The hazard of asphyxiation is often overlooked and must be stressed during operator training.
- This Material 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.
- 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.

Recommended uses and restrictions:

This MSDS is for information purposes only and is subject to change without prior notice. [Prior to purchase of products, please contact your local AIR LIQUIDE office for complete MSDS (with Manufacturer's name and emergency phone number)].

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