



Product Name: Carbon Dioxide

MSDS No.: MSDS004

Date: 11 May 2017

My Gas Material Safety Data Sheet

1. Chemical Product and Company Identification

Product Name: Carbon Dioxide, Compressed & Liquefied Gas	Trade Name: Carbon Dioxide
Product Use: Many	UN Number: 1013
Chemical Formula: CO ₂	Chemical Family: Inert gas
Telephone: Emergencies: * 0861 HELIUM 011 – 794 2423	Supplier /Manufacture: My Gas Phone: 011 794 2423 Fax: 086 508 3271

**Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your My Gas sales representative.*

2. Hazards Identification

Emergency Overview

Contact with liquid may cause cold burns/frostbite. Liquefied gas in high concentrations may cause asphyxiation.

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

ROUTES OF EXPOSURE: Inhalation.

EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:

INHALATION: Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headaches, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.

SKIN CONTACT: No harm expected from vapour.

SKIN ABSORPTION: No evidence of adverse effects from available information.

SWALLOWING: This product is a gas at normal temperature and pressure.



Product Name: Carbon Dioxide

MSDS No.: MSDS004

Date: 11 May 2017

EYE CONTACT: No harm expected.

EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:

No evidence of adverse effects from available information.

OTHER EFFECTS OF OVEREXPOSURE:

None known.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

The toxicology and the physical and chemical properties of this product suggest that overexposure is unlikely to aggravate medical condition.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

None currently known.

CARCINOGENICITY:

Not listed as carcinogen.

3. Composition and Information on Ingredients

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

UN NUMBER: 1013

CONCENTRATION: 100
% by Mole

4. 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: Immediately flush eyes thoroughly with water at least 15minutes.



Product Name: Carbon Dioxide

MSDS No.: MSDS004

Date: 11 May 2017

In case of frostbite spray with water for at least 15 minutes. Apply sterile dressing. Obtain medical assistance.

INDIGESTION: Not expected to present significant ingestion hazard under anticipated conditions of normal use.

5. Fire Fighting Measures

FLAMMABLE: No. **IF YES, UNDER WHAT CONDITIONS?** Not applicable.

EXTINGUISHING MEDIA:

All known extinguishants can be used.

PRODUCTS OF COMBUSTION:

None.

PROTECTION OF FIREFIGHTERS:

In confined space use self-contained breathing apparatus.

SPECIFIC PHYSICAL AND CHEMICAL HAZARDS:

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. Exposure to fire may cause container to rupture.

SENSITIVITY TO IMPACT:

Avoid impact against container.

SENSITIVITY TO STATIC DISCHARGE:

Not applicable.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:

Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.

FLAMMABLE LIMITS IN AIR, % by volume:

LOWER: Not applicable. **UPPER:** Not applicable.

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.



Product Name: Carbon Dioxide

MSDS No.: MSDS004

Date: 11 May 2017

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

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 workpits, or any place where its accumulation can be dangerous.

Clean up Methods:

Ventilate the area.

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 CO₂ particles must be ruled out. In order to rule out potential electrostatic discharge production, the system must be adequately grounded.

PRECAUTIONS TO BE TAKEN IN STORAGE:

Keep container below 50 degrees Celsius in a well ventilated place. 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.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

High pressure gas. Use piping and equipment adequately designed to withstand pressures to be encountered. **Gas can cause rapid suffocation due to oxygen deficiency.** Store and use with adequate ventilation. Close valve after each use; keep closed even when empty. **Prevent reverse flow.** Reverse flow into cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. **When returning cylinder to supplier,** be sure valve is closed, then install valve outlet plug tightly. **Never work on pressurized system.** If there is a leak, close the cylinder valve. Vent the system down in a safe and environmentally sound manner in compliance with



Product Name: Carbon Dioxide

MSDS No.: MSDS004

Date: 11 May 2017

all local laws; then repair the leak. **Never place a compressed gas cylinder where it may become part of an electrical circuit.**

RECOMMENDED PUBLICATIONS:

Additional information on storage, handling, and use of this product is available from the South African Compressed Gas Association (SACGA).

8. Exposure Controls/Personal Protection

PERSONAL PROTECTION:

Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes.

OCCUPATIONAL EXPOSURE LIMITS:

Carbon dioxide: ILV (EU) – 8 H – (mg/m): 9000
 Carbon dioxide: ILV (EU) – 8 H – (ppm): 5000
 Carbon dioxide: TLV-TWA (ppm): 5000
 Carbon dioxide: TLV-STEL (ppm): 3000

9. Physical and Chemical Properties

PHYSICAL STATE: Liquefied Gas	CRITICAL TEMPRATURE: 30	pH: Not applicable
BOILING POINT: -78.5 (s)	VAPOUR PRESSURE: 57.3 bar	MOLECULAR WEIGHT: 44
SPECIFIC GRAVITY: 1.03 LIQUID (Water = 1)	SOLUBILITY IN WATER (mg/l): 2000	
SPECIFIC GRAVITY: 1.52 VAPOUR (air = 1)	OTHER DATA: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.	MELTING POINT: -56.6
VAPOUR DENSITY: 0.00115 g/ml @ 21.1 C	FLAMMABILITY RANGE VOL% IN AIR: Non flammable	ODOUR THRESHOLD: No odour warning properties.
APPEARANCE & ODOUR: Colourless. Odourless		

10. Stability and Reactivity



Product Name: Carbon Dioxide

MSDS No.: MSDS004

Date: 11 May 2017

STABILITY:

Stable under normal conditions. Liquid spillages can cause embrittlement of structural materials.

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

When discharged in large quantities may contribute to the greenhouse effect. Can cause frost damage to vegetation.

13. Disposal Considerations

WASTE DISPOSAL METHOD: 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

TDG/IMO SHIPPING NAME: Carbon Dioxide

HAZARD CLASS: Label 2.2: Non-flammable, non-toxic gas.

IDENTIFICATION #: UN1013

SHIPPING LABEL(s): Non-flammable, non-poisonous gas



Product Name: Carbon Dioxide

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Date: 11 May 2017

PLACARD (When Required): Non-flammable, non-poisonous gas

SPECIAL SHIPPING INFORMATION:

Avoid transport on vehicles where the load space is not separated from the drivers compartment. Ensure the 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 and compliance with applicable regulations.

15. Regulatory Information

Not classified as dangerous preparation/substance. No EC labelling required.

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: 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.