



SC INDUSTRIAL GAS

MANUFACTURERS LTD

MATERIAL SAFETY DATA SHEET

CARBON DIOXIDE GAS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name CARBON DIOXIDE GAS

UN NO UN 1013

Recommended Use: Beverage product dispensing, freezing applications, Refrigerant, Shielding gas.

Chemical formula : CO₂

Manufacturer : S C Industrial Gas Manufacturers Ltd
km 3, Igbo-Etche Road, off Eleme Junction,
Port Harcourt, Rivers State.

Emergency Telephone No **084799837, 08053391019**

2. HAZARDS IDENTIFICATION

Hazard classification: Not classified as hazardous according to NOHSC criteria.

Classified as a dangerous good by the criteria of ADG code

Hazard identification: liquefied gas in high concentrations may cause asphyxiation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration	Formula
Carbon dioxide	124-38-9, 204-696-9	100%	CO ₂

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

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 unconcentrated area wearing self contained breathing apparatus.
- Keep victim warm and rested.
- Call a doctor.
- Apply artificial respiration if breathing stopped.

EYE CONTACT: Immediately flush eyes thoroughly with water for at least 15minutes. Obtain medical assistance.

SKIN CONTACT: In case of frostbite, spray with water for at least 15 minutes. Apply a sterile clothe. Obtain medical assistance.

INGESTION : Ingestion is not considered a potential route of exposure

5. FIRE-FIGHTING MEASURES

Flammable class: Non flammable

Specific hazard: 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 method: if possible, stop flow of product, move away from the container and cool with water from a protected position.
Special protective equipment for firefighting: in confined space, use self- contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTION

- Evacuate personnel to safe area.
- Ensure adequate ventilation.
- Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

ENVIRONMENTAL PRECAUTION

Try to stop gas release
Prevent from entering sewers, basement and work pits or any place where its accumulation can be dangerous.

METHODS FOR CLEANING Ventilate the area.

METHODS FOR CONTAINMENT

STOP THE FLOW OF GAS OR REMOVE CYLINDER TO OUTDOOR LOCATION IF THIS CAN BE DONE WITHOUT RISK. CONTACT THE EMERGENCY TELEPHONE NUMBER IN SECTION 1.

7. HANDLING AND STORAGE

HANDLING

Suck back of water into the container must be prevented.
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 well ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

PERSONAL PROTECTION Ensure ADEQUATE VENTILATION.

OCCUPATIONAL EXPOSURE LIMITS: Carbon dioxide: ILV(EU) -8 H -(mg/m³): 9000
Carbon dioxide: ILV (EU) – 8 H –[ppm]: 5000
Carbon dioxide: TLV – TWA[ppm]: 5000
Carbon dioxide: TLV –STEL[ppm]: 5000

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20°C : Liquefied gas

Colour: Colourless

Molecular formula : CO₂

Molecular weight : 44

Boiling point : -78.5° C

Critical temperature : 30 C

Melting/freezing point : -56.6° C

Vapor pressure [20°] : 57.3bar

Relative density, gas (air=1) : 1.52

Specific volume : 12.08 ft³/lb

Water solubility :2000mg/l

Critical pressure : 731.4 psia

Relative density, liquid(water=1) 0.82

Odour : No odour warning properties

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.

11. TOXICOLOGICAL INFORMATION

Toxicity information: In high concentrations causes rapid circulatory insufficiencies. 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 green house effect.

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

UN No.: 1013

Labeling: Label 2.2: Non flammable, non toxic gas

H.I.nr : 20

Proper shipping name : CARBON DIOXIDE

HAZCHEM- Emergency Action Code: 2T: 2 = Fine water spray.

T = Recommended personal protective equipment: full fire kit and breathing apparatus.

Other transport information: - Avoid transport on vehicles where load space is not separated from the drivers 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 there is adequate ventilation.
- Compliance with applicable regulators.

15. REGULATORY INFORMATION

EC Classification : Not included in annex 1

Not classified as dangerous preparation/substance

EC Labelling: No EC Labeling required.

Symbol(s) : None

S Phrase(s) : None

16. OTHER INFORMATION

- Asphyxiant in high concentration
- 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 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 EXPRESSED AND IMPLIED WARRANTIES

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.