



Safety Data Sheet

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CARBON DIOXIDE

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product name Carbon Dioxide
Chemical name/formula Carbon Dioxide / CO₂
Company identification See header and footer
Emergency phone no. See footer

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Preparation Substance
Components/Impurities Contains no other components or impurities, which will influence the classification of the product.
CAS No. 124-38-9

3. HAZARDS IDENTIFICATION

General

- Liquefied gas.
- In high concentrations may cause asphyxiation.

4. FIRST-AID MEASURES

Inhalation

- In high concentrations may cause asphyxiation. Symptoms may include loss of mobility or consciousness. Victim may not be aware of asphyxiation.
- Low concentrations of CO₂ may 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

- Contact with liquid may cause cold burns or frost bite.
- 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

Specific hazards

- Exposure to fire may cause containers to rupture or explode.

Hazardous combustion products

- None.

Suitable extinguishing media

- All known extinguishants can be used.

Specific methods

- If possible, stop flow of product.
- Move container away or cool with water from a protected position.

Special protective equipment (for fire fighters)

- In confined space, use a 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 & STORAGE

General

- Suck back of water into the container must be prevented. Do not allow back-feed into container.
- Use only properly specified equipment, which is suitable for this product, its supply pressure and temperature.
- Keep container below 50°C in a well-ventilated place.
- Refer to SOXAL's booklet on "safe handling, transport and storage of compressed gas cylinder" or contact SOXAL if in doubt.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure limit value

- 5,000 ppm PEL Short Term
- 30,000 ppm PEL Long Term (Singapore Factories Order 1996)

Personal protection

- Ensure adequate ventilation.

9. PHYSICAL & CHEMICAL PROPERTIES

Molecular weight 44
Melting point - 56.6°C
Boiling point - 78.5°C
Critical temperature 30°C
Relative density, gas 1.52 (air = 1)
Relative density, liquid 1.03 (water = 1)
Vapour pressure @ 20°C 57.3 Bar
Solubility mg/l water 2000 mg/l
Appearance/Colour Colourless gas
Odour No odour warning properties
Auto-ignition temperature Not applicable
Flammability range Not flammable
Others Gas/vapour is heavier than air. May accumulate in confined space, particularly at or below ground level.

For product and/or safety enquiry, please send, call, fax or log on to:

SINGAPORE OXYGEN AIR LIQUIDE PTE LTD
16, Jalan Buroh, Singapore 619475.

Tel: (65) 6265 3788 or 6265 4555 Fax: (65) 6265 1441 or 6268 8403 Website: www.soxal.com Business Registration No: 197001157D

CARBON DIOXIDE

10. STABILITY & REACTIVITY

General

- Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

General

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

12. ECOLOGICAL INFORMATION

General

- When discharge in large quantities, may contribute to greenhouse effect (global warming factor = 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 SOXAL if guidance is required.

14. TRANSPORT INFORMATION

UN No. 1013
Class/Division 2.2 (Non-Flammable Gas)
Subsidiary risk None
UN proper shipping name Carbon Dioxide
IMO/IATA shipping label



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 they are firmly secured and:
 - compliance with applicable regulations;
 - cylinder valve is closed and not leaking;
 - valve outlet cap nut or plug (where provided) is correctly fitted;
 - valve protection device (where provided) is correctly fitted; and
 - there is adequate ventilation.

15. REGULATORY INFORMATION

General

- Singapore's WSH (General Provisions) Regulations 2006, Sections 42 & 43.
- Singapore Standards:
 - CP 12:2000 Part 1
 - CP 98:2003
 - SS 152:2003
 - SS 286:1984 Part 1 to Part 5

Risk and safety phrases

- S51 - Use only in well ventilated area.

16. OTHER INFORMATION

General

- Ensure all local regulations or legislations are observed.
- Asphyxiant in high concentrations. Keep container in a well-ventilated place. Do not breathe the gas.
- The hazard of asphyxiation is often overlooked and must be stressed before use.
- Contact with liquid may cause cold burns/frost bite.
- Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

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