



Material Safety Data Sheet: CO₂

Unit 14, The Homeground, Buckingham Industrial Park, Buckingham. MK18 1UH
Tel: 0870 4422 644 Fax: 0870 4422 645 Email: info@fireprosystems.co.uk

1 Identification of the substance/preparation and of the company.

Product Name: Carbon Dioxide
Chemical Formula: CO₂
Company Identification: Praxair.

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 Nr: 00124-38-9
EEC Nr (from EINECS): 204-696-9

3 Hazards Identification

Hazards Identification: 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/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 has 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

Specific Hazards: Exposure to fire may cause containers to rupture/explode. Non-flammable.
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 self-contained breathing apparatus.

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 work pits, or any place where its accumulation can be dangerous.
Clean up methods: Ventilate area.

7 Handling and storage

Handling and storage: Suck back of water into the container must be prevented. Do not allow back feed 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. Keep container below 50 °C in a well ventilated place.

8 Exposure Control/Personal Protection

Exposure limit value: 5000 ppm (1995-1996 edition)
Exposure limit value for country:
▶ **Great Britain:**
▶ STEL: 15000 ppm
▶ LTEL: 5000 ppm (EH 40/95)
▶ **Germany:** MAK=5000 ppm
Personal protection: Ensure adequate ventilation.

9 Physical And Chemical Properties

Molecular weight: 44
Melting point: -56.6 °C
Boiling points: -78,5(s) °C
Critical temperature: 30 °C
Relative density, gas: 1.52 (air=1)
Relative density, liquid: 0.82 (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.
Other data: Gas/vapour 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

General: Low concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

12 Ecological Information

General: When discharged 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. To atmosphere in a well ventilated place. Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required.



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14 Transport Information

Proper Shipping Name: Carbon dioxide

UN Nr: 1013

Class/Div: 2.2

ADR/RID Item Nr: 2, 2^oA

ADR/RID Hazard Nr: 20

CEFIC Tremcard Nr: 11

CEFIC Groupcard Nr: 20g16

Labelling ADR: Label 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 they are firmly secured and:

- ▶ 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
- ▶ there is adequate ventilation.
- ▶ compliance with applicable regulations

15 Regulatory Information

Number in Annex I of Dir 67/548: Not Included in Annex I

EC Classification: (Proposed by the industry) Not classified as dangerous substance

Labelling of cylinders:

▶ **Symbols:** Road transport symbols are used and selected according to the most stringent product classification- EC or International transport regulations. For consistency, Risk phrases and Safety phrases are selected according to the same rule.

Label 2: non flammable non toxic gas.

▶ **Risk Phrases:** RAs asphyxiant in high concentrations.

▶ **Safety phrases:** S9 Keep container in well ventilated place. S23 Do not breathe the gas.

16 Other Information

Ensure all national/local regulations are observed. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Contact with liquid may cause cold burns/frostbite. 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.