









# **MATERIAL SAFETY DATA SHEET - CARBON DIOXIDE**

### 1. Identification of product/substance and company

Product Identifier Carbon Dioxide / CO2

Trade Name

Chemical Description Carbon Dioxide

Chemical Formula CO2

Registration No. Listed in Annex IV / V REACH, exempted from registration

Use Fire extinguishing agent

#### 2. Hazards Identification

Hazard Pictograms Code GHS04 Signal Word Warning

Hazard Statements H280: Contains gas under pressure; may explode if heated

Precautionary Statements P403: Store in a well-ventilated place

R-Phrases None S-Phrases None

Inhalation High concentrations cause asphyxiation

Skin Frostbite and burns from frostbite may occur on contact

Eyes Could cause damage to the eyes on contact

### 3. Composition & Information on Ingredients

Reach No.	CAS No.	Ingredients	%	EU Classification
204-696-9	124-38-9	Carbon Dioxide	100	Lig. Gas (H280

#### 4. First Aid Measures

Contact with Skin Flush the area with water for a minimum of 15 minutes.

Medical attention is advised.

Contact with Eyes Flush the area with water for a minimum of 15 minutes.

Medical attention is advised.

Inhalation This product can cause asphyxiation. Symptoms include loss of mobility

and consciousness. Remove casualty from exposure and call for professional medical help. Use breathing apparatus. If breathing has

stopped begin artificial respiration. Keep casualty warm.

Ingestion Ingestion is not considered a potential route of exposure.

#### 5. Fire Fighting Measures

There is no fire risk with carbon dioxide but emergency services must be made aware of the presence of cryogenic gas cylinders as they could detonate if heated causing danger & destruction. Spray cylinders with water from a protected position and maintaining a safe distance to keep the cylinder and contents cool. In confined spaces use self-contained breathing apparatus.











#### 6. Accidental Release Measures

Personal Precautions If required wear self-contained breathing apparatus and suitable warm

protective clothing. Evacuate area at all times

Environmental Precautions If it is safe to do so, close the cylinder valve and transport to the open

air. Accumulations of invisible CO2 gas in low-lying areas such as pits, basements or sewers can dangerous and these areas should not be entered without suitable breathing equipment until pronounced safe to

do so.

Clean Up Methods Ventilate area

7. Handling & Storage

Handling Cylinders must only be handled by trained personnel. Do not lift or move

the cylinder using the valve. Do not use force to open or close the valve. Cylinders must always be suitable for the gas(es) and must have the correct test and working pressure. Cylinders must be regularly

inspected.

Storage Store cylinders away from heat sources and preferably in a well-

ventilated area. Larger cylinders should be kept out of doors, away from direct sunlight and in a well ventilated, safe compound. Identification labels and marks should always be clear and legible. Store in an upright

position.

#### 8. Personal Protection & Exposure Controls

Personal Protection Ensure adequate ventilation

Eye Protection Wear goggles to protect from ice particles

exposure limits

Skin Protection Wear suitable protective clothing and avoid contact with the skin at all

times

Hand Protection Use suitable insulated gloves

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]: 30000

### 9. Physical & Chemical Properties

Physical State at 20°C Gas

Colour Colourless

Odour No odour warning properties

Molecular Weight

Melting Point

Soliting Point

Critical Temperature

Vapour Pressure [20°C]

Relative Density, gas (air=1)

Relative Density, liquid (water=1)

Results 

1.52

Relative Density, liquid (water=1)

0.82

Solubility in Water 2000mg/l











# 10. Stability & Reactivity

Stability Stable Hazardous decomposition products None

Materials to avoid Rubber & PTFE. Will embrittle materials not designed or intended to be

used at low temperatures

#### 11. Toxicological Information

Increased respiration at low concentrations.

Symptoms: Headache, nausea and vomiting leading to unconsciousness.

# 12. Ecological Information

Cryogenic liquid escape can cause localised frost. Large discharges will contribute to the greenhouse effect.

#### 13. Disposal Considerations

Avoid discharging large quantities into the atmosphere or where there is a danger of accumulations.

## 14. Transport Information

UN No. 1013

Labelling ADR, IMDG, IATA

2.2: Non-flammable, non-toxic gas

Land Transport ADR/RID

H.I. Nr 20

UN Proper Shipping Name CARBON DIOXIDE

Transport Hazard Class 2
ADR/RID Classification Code 2 A
Packing Instructions – general P200

Tunnel Restriction C/E Tank Carriage: Passage

forbidden through tunnels of category C, D and E. Other carriage: Passage forbidden through tunnels of category E.

Sea Transport IMO-IMDG Code

Proper Shipping Name CARBON DIOXIDE

Class 2.2
IMO Packing Group P200
Emergency Schedule – Fire F-C
Emergency Schedule – Spillage S-V
Instructions – Packing P200

Air Transport ICAO/IATA

Proper Shipping Name CARBON DIOXIDE

Class 2.2

Passenger and Cargo Aircraft Packing Instruction 200 Cargo Aircraft Only Packing Instruction 200











# 15. Transport Information (cont'd)

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 emergency.

Before transporting product containers:

- Ensure that cylinders 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
- Ensure compliance with applicable regulations

# 16. Regulatory Information

Safety Phrases Cylinders / vessels to be kept in a well-ventilated area. Use P.P.E. Do not

breathe gas.

Risk Phrases High concentrations cause asphyxiation. Risk of frostbite.

EC Classification Not classified as a dangerous substance

### 17. Other Information

## Employers' Responsibilities

It is the duty of employers to tell employees and others who may be affected of the hazards outlined in this sheet and the need to take precautions and adopt safety measures in a responsible manner.

# **Data Information**

The data and advice outlined in these sheets apply to the product when sold for the application detailed in paragraph 1. Other risks may apply when the product is used for other purposes. Do not use the product for other purposes without applying for written advice and guidance from the company listed in paragraph 1.

### Information Circulation

It is your duty to ensure that anyone handling the product (including those purchasing the product to supply it for third party use) are provided with the information contained in these sheets