

## Abridgment from the SAFETY DATA SHEET

in accordance with 1907/2006 / EG

Extinguishing agent for fire classification **B** based on gases  
(Approval number or name of the extinguishing agent)

### CO2 / Carbon dioxide

#### 1. Emergency phone Nr.

**Beratungsstelle für Vergiftungserscheinungen**  
**Spandauer Damm 130, D-14050 Berlin**  
**Tel.: +49 (0) 30 / 19240**

#### 2. Hazards identification

##### Substance classification

**Hazard classification :** Not included in annex VI.

**acc. Dir. 1272/2008/EC (CLP)** Gas liquefied under pressure, H281. - Warning -.

**EC-classification acc. :** Not classified as dangerous. (Not included in 67/548/EC annex I)

**67/548/EC u. 1999/45/EC**

**Physical hazards :** Contains gas under pressure; may explode if heated. One volume of liquid or solid will give about 500 or 900 volumes of gas, respectively, at ambient conditions.

**Health hazards :** In high concentrations may cause asphyxiation. When liquid carbon dioxide under pressure is released to atmosphere, the discharge consists of gaseous and solid carbon dioxide only. Slightly corrosive in the presence of moisture. Solid carbon dioxide is white and when in direct contact with the skin will cause acute cold damage to skin – “cold burn”.

##### Label elements

##### Labelling Regulation

**EC 1272/2008 CLP)**

**Hazard pictograms code :** GHS04

**Signal word :** Warning

**Hazard statements :** H281 - Contains gas under pressure; may explode if heated.

##### Precautionary statements

**Storage :** P403 : Store in a well-ventilated place.

**Labelling EC 67/548 or EC 1999/45**

**Symbol(s) :** None.

**R Phrase(s) :** None.

**S Phrase(s) :** None.

##### 2.3 Other hazards

**Other hazards :** Asphyxiant in high concentrations.

#### 3. Composition / information on ingredients

- **Chemical characterization:** Substance
- **Description:** Void
- **Components:** Void

Main components	CAS-Nr.:	EINECS-Nr.:	Reach-Registrier-Nr.:
Carbon dioxide	124-38-9	204-696-9	

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vertreten durch Jockel Verwaltungs GmbH, HRB 19010 AG Wuppertal,  
diese vertreten durch die Geschäftsführer K.-G. Jockel, Frank Jockel, Holger Jockel.

#### 4. First aid measures

##### 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 CO<sub>2</sub> 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 for at least 15 minutes. In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.

**Ingestion :** Ingestion is not considered a potential route of exposure.

**General advices :** Obtain medical assistance.

#### 5. Firefighting measures

**Suitable extinguishing media :** All known extinguishants can be used.

**Specific hazards :** Exposure to fire may cause containers to rupture/explode. Non flammable. Inform Fire Brigade.

**Hazardous combustion products :** None.

**Specific methods :** If possible, stop flow of product. Move away from the container and 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 accumulation can be dangerous.

**Clean up methods :** Ventilate area.

**Reference to other chapters:** see also chapter 8 and 13

#### 7. Handling and storage

**Handling :** 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.

**Storage :** Keep container below 50°C in a well ventilated place.

#### 8. Exposure controls / personal protection

##### Occupational Exposure Limits:

Carbon dioxide : TLV<sup>©</sup> -TWA [ppm] : 5000

Carbon dioxide : TLV<sup>©</sup> -STEL [ppm] : 30000

Carbon dioxide : OEL (UK)-LTEL [ppm] : 5000

Carbon dioxide : OEL (UK)-STEL [ppm] : 15000

Carbon dioxide : AGW - (Germany) [ppm] : 5000

**Personal protection:** Ensure adequate ventilation.

#### 9. Physical and chemical properties

**Colour :** Colourless

**Odour :** Odourless

**Molecular weight :** 44,01 g/mol

**Sublimation point :** -78,5 °C at 1,13 bar

**Tripel-point :** -56,5 °C at 5,185 bar

**Critical Temperature :** 31 °C

**Critical pressure :** 73,83 bar

**Flammability range [vol% in air]:** : Non flammable

**Density gas (0 °C,1,013 bar) :** 1,9768 kg/m<sup>3</sup>

**Relative density (air = 1) :** 1,5629

**Vapour pressure at -10 °C :** 27 bar

**Vapour pressure at 20 °C :** 57 bar

**Solubility in water (at +20 °C) :** 1610 mg/l

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#### 10. Stability and reactivity

Stable under normal conditions.

#### 11. Toxicological information

In high concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness. Carbon dioxide is mildly toxic, with no cumulative effects.

#### 12. Ecological information

**Ecological effects information :** When discharged in large quantities may contribute to the greenhouse effect.

**Global warming factor :** [CO<sub>2</sub>=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.

#### 14. Transport information

**Landtransport : ADR/RID**

UN-Nr. : 2187

**Proper shipping name : CARBON DIOXIDE  
(ADR/RID, IMDG, IATA) REFRIGERATED**

**H.L.-Nr. :** 22

Class : 2

Classification code : 3 A

Labelling : 2.2

Tunnel restriction : (C/E)

Packing instruction : P203

Packing group : none

**Sea transport : IMDG**

Class : 2

Emergency Schedule EmS – Fire : F-C

Emergency Schedule EmS – Spillage : S-V

Marine pollutant : no

**Air transport : ICAO/IATA-DGR**

Class : 2

UN-Nr. : 2187

Proper shipping name : CARBON DIOXIDE

Labelling : 2.2

Packing instruction : 202

**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 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 valve protection device (where provided) is correctly fitted.
- Ensure there is adequate ventilation.
- Compliance with applicable regulations.

#### 15. Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

Ensure all national/local regulations are observed.

**Seveso regulation 96/82/EC :** Not covered.

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#### 16. Other information

Asphyxiant in high concentrations.

Keep container in a well-ventilated place.

Do not breathe the gas.

Contact with liquid may cause cold burns/frostbite.

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 LIABILITY:** 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. Details given in this document are believed to be correct at the time of going to press. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

This information is based on our present knowledge, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Existing laws and regulations of the recipient of this product to their own responsibility.

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