



## Safety data sheet Carbon dioxide, solid (Dry ice)

Creation date : 27.01.2005  
Revision date : 29.11.2006

Version : 1.1

DE / E

SDS No. : 9390  
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### 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

#### Product name

Carbon dioxide, solid (Dry ice)

**Chemical formula** CO<sub>2</sub>

#### Known uses

Not known.

#### Company identification

Linde AG, Gas and Engineering, Linde Gas Division Seitnerstraße  
70, D-82049 Pullach

**Emergency phone numbers:** 089-7446-0

### 2 COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/Preparation:** Substance

#### Components/Impurities

**CAS Nr:** 124-38-9

**EEC Nr (from EINECS) :** 204-696-9

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

### 3 HAZARDS IDENTIFICATION

#### Classification

Asphyxiant in high concentrations.

### 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 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. Obtain medical assistance

#### Ingestion

To swallow must be absolutely avoided, since coldness and developing pressure could be dangerous. Obtain medical assistance

### 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 workpits, 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 backfeed 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.

Prevent bottles from falling down. Keep container below 50°C in a well ventilated place. Observe "Technische Regeln Druckgase (TRG) 280 Ziffer 5"

### 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure limit value

Value type	value	Note
Germany - MAK	5.000 ppm	TRGS 900

#### Personal protection

Ensure adequate ventilation.

### 9 PHYSICAL AND CHEMICAL PROPERTIES

#### General information

**Odour:** None

#### Important information on environment, health and safety

**Molecular weight:** 44 g/mol

**Melting point:** -56,6 °C

**Sublimation point:** -78,5 °C

**Critical temperature:** 31 °C

**Autoignition temperature:** Not applicable

**Flammability range:** Not applicable

**Relative density, gas:** 1,52

**Relative density, liquid:** 0,82

**Vapour Pressure 20 °C:** 57,3 bar

**Solubility mg/l water:** 2000 mg/l

#### 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

No known toxicological effects from this product.

### 12 ECOLOGICAL INFORMATION

#### General

When discharged in large quantities may contribute to the greenhouse effect.

### 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

#### ADR/RID

Not submitted to ADR/RID.

#### IMDG

Class 9

#### UN number and proper shipping name

UN 1845 Carbon dioxide, solid

Labels 9

Packing Instruction P003 Packing group III

EmS FC, SV

#### IATA

Class 9

#### UN number and proper shipping name

UN 1845 Carbon dioxide, solid

Labels 9

Packing Instruction P904 Packing group III

#### 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. Ensure adequate ventilation.

### 15 REGULATORY INFORMATION

#### Number in Annex I of Dir 67/548

Not included in Annex I.

#### EC Classification

Not classified as hazardous to health.

### Labelling

#### - Symbols

No symbol required.

#### - Risk Phrases

RA5 Asphyxiant in high concentrations.

### Further national regulations

Pressure Vessel Regulation

Regulations for the prevention of industrial accidents

#### Water pollution class

Not polluting to waters according to VwVwS from 27.07.2005.

#### TA-Luft

Not classified according to TA-Luft.

### 16 OTHER INFORMATION

Ensure all national/local regulations are observed. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

#### Advice

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.

#### Further informations

Linde safety advice

No. 3 Oxygen deficiency

No. 7 Safe handling of gas cylinders and cylinder bundles

No. 11 Transport of gas receptacles in vehicles

End of document