

Carbon dioxide CO₂

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Version. 08-01-2024

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY.

Product identifier.

Gas name.	Carbon dioxide
Chemical symbol.	CO ₂
Other names.	Carbonic acid, R744
CAS-no.	00124-38-9
EEC no	204-696-9
Registration-No. registration.	Exempted from registration.

Use.

Industrial and professional. Perform risk assessment prior to use.

Medical applications.

Food applications

Consumer uses.

Use as refrigerant.

Blast cleaning.

Use as a biocide.

Firefighting measures.

Water treatment.

Contact supplier for more uses information.

Company identification.

Strandmollen A/S
 Strandvejen 895
 2930 Klampenborg
 Denmark
 Telefonnummer +45 701 02 107
 Competent person:
 Nete Faxøe
 E-Mail address.
 nete.faxoe@strandmollen.dk

Emergency telephone number.

Use your national or local emergency number.

In DK: Giftlinjen +45 82 12 12 12

In S: Giftinformationscentralen +46-8-331231.

2. HAZARDS IDENTIFICATION.

Classification of the substance or mixture.**Physical hazards.**

Gases under pressure.

liquefied gas.

Label elements.

According to CLP Regulation.

Hazard pictogram.

**Hazard pictograms code.**

GHS04

Signal word.

WARNING

Hazard statements.

H280 : Contains gas under pressure; may explode if heated.

EIGA0357 : Asphyxiant in high concentrations.

Safety sentences.

Prevention.	-
Response.	-
Storage.	P403

P403 : Store in a well-ventilated place.

According to Directive 67/548/EEC (DSD) or Directive 1999/45/EC (DPD).

S9 Keep container in a well-ventilated place.

S23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

3. COMPOSITION/INFORMATION ON INGREDIENTS.

Product identifier.

Gas name.	Carbon dioxide
Chemical symbol.	CO ₂
CAS-no.	00124-38-9
EEC no	204-696-9
Classification.	none.

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

4. FIRST AID MEASURES.

Description of first aid measures.

In case of inhalation.

Remove victim to uncontaminated area wearing self contained breathing. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

In case of skin contact.

For liquid spillage - flush with water for at least 15 minutes.

In case of eye contact.

Immediately flush eyes thoroughly with water for at least 15 minutes.

Most important symptoms and effects, both acute and delayed.

In high concentrations may cause asphyxiation.
Low concentrations of CO₂ cause increased respiration and headache.

Additional information and indication of any immediate medical attention and special treatment needed

When obtaining medical advice, show the safety data sheet or label.

5. FIREFIGHTING MEASURES.

Extinguishing media.

Suitable extinguishing media.

Water spray or fog.
Water.
Inertgas, Non flammable. Inert gases extinguishes fires.

Extinguishing media which must not be used for safety reasons.

none.

Special hazards at fire.

Special hazards arising from the substance or mixture:

Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products.

none.

Advice for fire-fighters .

Specific methods.

If possible, stop flow of product.
Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains. Use water spray or fog to knock down fire fumes if possible . Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire-fighters.

In confined space use self-contained breathing apparatus. EN 469: Protective clothing for firefighters. EN 659: Protective gloves for firefighters.

6. ACCIDENTAL RELEASE MEASURES.

Personal precautions, protective equipment and emergency procedures.

Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Ensure adequate air ventilation.
Evacuate area.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Try to stop release.
Stay upwind
Act in accordance with local emergency plan.

Environmental precautions.

none.

Methods and materials for containment and cleaning up.

Ventilate area.

Reference to other sections.

See also sections 8 and 13.

7. HANDLING AND STORAGE.

Precautions for safe handling.

Safe use of the product.

Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Potential production of solid CO₂ particles must be ruled out. In order to rule out potential electrostatic discharge, the system
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Do not allow backfeed into the container.
Do not smoke while handling the product.

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Only experienced and properly instructed persons should handle gases under pressure.
Ensure the complete gas system has been (or is regularly) checked for leaks before use.
The substance must be handled in accordance with good industrial hygiene and safety procedures
Consider safety relief device(s) in gas installations.

Safe handling of the gas receptacle.

Refer to supplier's container handling instructions.
Do not allow backfeed into the container.
Protect cylinders from physical damage.
Do not remove or deface labels for the identification of the cylinder contents.
If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.
Close container valve after each use and when empty, even if still connected to equipment.
Never attempt to repair or modify container valves or safety relief devices.
Damaged valves should be reported immediately to the supplier.
Keep container valve outlets clean and free from contaminants particularly oil and water.
Never attempt to transfer gases from one cylinder/container to another.

Conditions for safe storage, including any incompatibilities.

The container must be kept in a well ventilated location.
Observe all regulations and local requirements regarding storage of containers.
Store containers in location free from fire risk and away from sources of heat and ignition.
Keep away from combustible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION.**Control parameters.****Occupational Exposure limits.**

Limits for workplace exposure: 5000ppm

Appropriate engineering controls.

Systems under pressure should be regularly checked for leakages
Ensure exposure is below occupational exposure limits.
Oxygen detectors should be used when asphyxiating gases may be released.

Personal protective equipment.

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product.

Eye and face protection.

Wear safety glasses with side shields.

Skin protection.**Hand protection.**

Wear working gloves when handling gas cylinders and containers.

Other skin protection.

Wear safety shoes while handling gas containers.
Standard EN ISO 20345 Personal protective equipment - Safety footwear.

Respiratory protection.

Gas filters do not protect against oxygen deficiency.
Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known.
Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres

Thermal hazards.

None necessary.

Environmental exposure controls.

None necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES.**Information on basic physical and chemical properties.**

Physical state (20°C, 1013 mbar).	Gas.
Colour.	colorless
Odour.	lightly pricking
Molar mass.	44,01 g/mol
Melting point.	-78,45°C
Boiling point.	-78,45°C
Critical temperature C.	31,00°C
Critical pressure.	76,27 Bara
Non flammable gas.	
Gas pressure at 15°C.	51,20 Barg
Relative density of gas to air.	Heavier than air.
Solubility in water.	851mL/L-water
Viscosity, dynamic.	14,80 mPa s

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10. STABILITY AND REACTIVITY.

Reactivity.**Chemical stability.**

Stable under normal conditions.

Conditions to avoid.

None other than the recommended storage and handling conditions. (see section 7).

Incompatible materials.

For additional information on compatibility refer to ISO 11114.

Hazardous decomposition products.

none.

11. INFORMATION ON TOXICOLOGICAL EFFECTS:

In high concentrations cause rapid circulatory insufficiency even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness and death.

No toxic classification criteria from this product.

Skin corrosion/irritation.

No known effects from this product.

Serious eye damage/irritation.

No known effects from this product.

Germ cell mutagenicity.

No known effects from this product.

may have carcinogenic effect.

No known effects from this product.

Reproductive toxicity.

No known effects from this product.

Specific target organ toxicity (STOT) -single exposure.

No known effects from this product.

Specific target organ toxicity (STOT) -repeated exposure.

No known effects from this product.

12. ECOLOGICAL INFORMATION.

Toxicity:

When discharged in large quantities may contribute to the

greenhouse effect.

The product is a gas, and will mainly diffuse into the atmosphere.

Bioaccumulative potential.

No ecological damage caused by this product.

Mobility in soil.

No ecological damage caused by this product.

Effects on the ozone layer.

No known effects from this product.

Effects on global warming.

Global opvarmning potientiale (GWP). = 1

13. DISPOSAL CONSIDERATIONS.

Waste treatment methods.

May be vented to atmosphere in a well ventilated place.

Do not discharge into any place where its accumulation could be dangerous.

14. TRANSPORT INFORMATION.

ADR.	2,2.A
UN-no.	1013
UN-Text.	Carbon dioxide
Hazard Identification Number.	20
Proper shipping name.	UN 1013 Carbon dioxide 2,2.A

Labelling ADR,

Compressed gas.

Other transport information:

Ensure there is adequate ventilation.

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 cylinders and containers:

- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve protection device (where provided) is correctly fitted.

Avoid transport on vehicles where the load space is not separated from the driver's compartment.

15. REGULATORY INFORMATION.

EU legislation.

Restrictions on use.

none.

Seveso Directive 2012/18/EU (Seveso 3).

Not covered.

National legislation.

Ensure all national and local regulations are observed.

16. OTHER INFORMATIONS.

Indication of changes.

Revised Safety Data Sheet (SDS) according to Commission Regulation (EU) N°453/2010.

Training advices:

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Disclaimer.

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.