



SAFETY DATA SHEET

according to Safe Work Australia

Carbon dioxide

Material number 4042X/4068X/4092X

Revision date: 15/12/2022

Version: 14.0

Replaces version: 13.0

Language: en-AU

Date of print: 2/1/2023

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1. Product identifier and identity for the chemical

Product identifier

Trade name: Carbon dioxide

This safety data sheet pertains to the following products:

40422040: 425 g bottle
40424000: 2 kg bottle
40423000: 2 kg bottle
40422000: 4 x 425 g Bottle
40423024: 24 x 2 kg Bottle
40423063: 63 x 2 kg Bottle
40424024: 24 x 2 kg Bottle
40424063: 63 x 2 kg Bottle
40651000: 1 x 425 g Bottle
40687000: 4 x 425 g Bottle
40920000: 18 x 425 g Bottle
40920018: 18 x 425 g Bottle
40921000: 18 x 425 g Bottle

Recommended use of the chemical and restrictions on use

General use: Propellant for food and beverages (E290)
Food Additive

Suppliers name, address and phone number

Company name: Grohe AG
Street/POB-No.: Industriepark Edelburg
Postal Code, city: DE-58675 Hemer
WWW: www.grohe.com
E-mail: info@grohe.com
Telephone: +49 (0)2372 93-0
Telefax: +49 (0)2372 93-1322

Department responsible for information:
Telephone: +49 (0)2372 93-2037
sustainability@grohe.com

Additional information: Corporate headquarters:
Grohe AG
Feldmühleplatz 15
40545 Düsseldorf
Telephone: +49 (0)211 9130 3000

Emergency phone number

GIZ-Nord, Göttingen, Germany,
Telephone: +49 551-19240

2. Hazard Identification

Classification of the hazardous chemical

GHS classification

Liquefied gas Contains gas under pressure; may explode if heated.

Label elements

Signal word:

Warning

Hazard statements:

Contains gas under pressure; may explode if heated.

Precautionary statements:

Keep out of reach of children.

Protect from sunlight. Store in a well-ventilated place.

Other hazards which do not result in classification

Asphyxiant in high concentrations.

Contact with the product can cause cold burns or frostbite.

Additional information

Liquefied gas

3. Composition/information on ingredients**Substances**Identity of chemical ingredients: CO₂

Carbon dioxide (Compressed, liquefied gas)

CAS-Number:

124-38-9

RTECS-Number:

FF6400000

4. First Aid Measures**Description of necessary first aid measures**

In case of inhalation:

Move victim to fresh air wearing a self contained breathing apparatus. Make sure he/she is warm and comfortable. Seek medical attention.

If breathing has stopped, give artificial respiration immediately.

Following skin contact:

In the event of cold burns, wash with water for at least 15 minutes. Cover frostbitten skin with sterile tissue. Seek medical attention.

After eye contact:

Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. In case of troubles or persistent symptoms, consult an ophthalmologist.

After swallowing:

Swallowing is not regarded as a possible way of exposition.

Symptoms caused by exposure

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility and consciousness. Victim may not be aware of asphyxiation.

Low concentrations of carbon dioxide cause accelerated breathing and headaches.

Contact with the product can cause cold burns or frostbite.

Medical Attention and Special Treatment

Treat symptomatically.

5. Fire Fighting Measures**Suitable extinguishing media**

Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

Extinguishing media which must not be used for safety reasons:

Full water jet



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Specific hazards arising from the chemical

Not combustible. In case of surrounding fires: May form dangerous gases and vapours in case of fire.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

Hazchem-Code: 2T

Exposure to fire may cause containers to rupture/explode.

If possible, stop flow of product. Move container away or cool with water from a protected position.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate area. Provide adequate ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Prevent access to canalization, cellars, work pits or other locations where the gathering could be dangerous.

Wear appropriate protective equipment. Keep unprotected people away.

Environmental precautions

If possible, stop flow of product.

Methods and material for containment and cleaning up

Vapours are invisible, heavier than air and will spread at floor level. Vapours are suffocating. Air the room.

Additional information:

Build up of static electricity may occur at increased flow rates and may ignite any explosive mixtures present.

7. Handling and Storage

Precautions for safe handling

Advices on safe handling:

Make sure there is sufficient air exchange and / or that working rooms are air suctioned. Prevent water access and back-flow into the gas vessel. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact supplier if guidance is required. Refer to gas supplier's handling instructions.

Precautions against fire and explosion:

Build up of static electricity may occur at increased flow rates and may ignite any explosive mixtures present.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container in a well-ventilated place.

Protect from direct exposure to sunlight and temperatures exceeding 50 °C.

Store containers in upright position. Do not drop, drag or bang the container.

Secure gas cylinders before transport. For transport, screw tightly protective caps and dummy nuts.

Transport always in closed, upright and safe containers

Keep the product and the empty containers away from heat and ignition sources.

Hints on joint storage:

Keep away from combustible material.



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8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values:

Type	Limit value
Australia: OEL-STEL	54000 mg/m ³ ; 30000 ppm (Carbon dioxide in coal mines)
Australia: OEL-STEL	54000 mg/m ³ ; 30000 ppm
Australia: OEL-TWA	22500 mg/m ³ ; 12500 ppm (Carbon dioxide in coal mines)
Australia: OEL-TWA	9000 mg/m ³ ; 5000 ppm

Appropriate engineering controls

Transfer and handle product only in closed systems.
Provide good ventilation and/or an exhaust system in the work area.

Personal protective equipment (PPE)

Occupational exposure controls

Respiratory protection: Respiratory protection must be worn according to AS/NZS 1715 and AS/NZS 1716 whenever the WEL levels have been exceeded.
The following applies to carbon dioxide in general:
If the concentration is exceeded, closed-circuit breathing apparatus must be used!

Hand protection: Wear gloves in accordance with EN 388 as a protection against mechanical risks.
Protective gloves against coldness according to EN 511 (Glove material: Leather).
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed eye protectors according to AS/NZS 1337.

Body protection: Wear suitable protective clothing.
When handling gas flasks/containers, wear suitable safety shoes.

General protection and hygiene measures:
When using do not eat, drink or smoke.
Wash hands before breaks and after work.
Do not breathe gas/fumes/vapour/spray.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance: Form: gaseous
Colour: colourless

Odour: odourless

Odour threshold: No data available

pH: No data available

Melting point/freezing point: -56.6 °C (5,2 bar)

Initial boiling point and boiling range: -78.5 °C

Flash point/flash point range: not applicable

Evaporation rate: No data available

Flammability: No data available

Explosion limits: No data available

Vapour pressure: at 20 °C: 57300 hPa

Vapour density: No data available

Density: at 20 °C: (gas) 0.00197 g/cm³



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Water solubility:	1.5 - 2 g/L
Partition coefficient: n-octanol/water:	0.83 log P(o/w) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.
Auto-ignition temperature:	No data available
Decomposition temperature:	> 2000 °C

Additional information

Viscosity:	No data available
Volatile organic compounds content (VOC):	0 % by weight
Explosive properties:	Product is not explosive.
Oxidizing characteristics:	none
Additional information:	Molar mass: 44.01 g/mol Relative vapour density at 20 °C (air=1): 1.52 Critical temperature: 31 °C Sublimation point: -78.5 °C Relative density, liquid (water = 1): 1.03

10. Stability and Reactivity

Reactivity:	Gases/vapours are heavier than air and can accumulate in closed spaces, particularly on the ground/in lower lying areas. Build up of static electricity may occur at increased flow rates and may ignite any explosive mixtures present.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Danger of explosion with: Potassium, Sodium peroxide, metal powder. Danger of polymerisation with: Acrylaldehyde, 2-Methylaziridine.
Conditions to avoid:	Keep away from heat sources, sparks and open flames.
Incompatible materials:	Amines, Ammonia, Strong bases, Water, Barium peroxide, Caesium oxides, Aluminium lithium hydride, Lithium, Sodium
Hazardous decomposition products:	No dangerous substances are released.
Thermal decomposition:	> 2000 °C

11. Toxicological information

Information on toxicological effects

Acute toxicity:	Lowest published toxic concentration Rat, inhalative:	6 pph/24h/10d
	Lowest published lethal concentration human, inhalative:	9 pph/5min



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Toxicological effects:

- Acute toxicity (oral): Lack of data.
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation: Lack of data.
- Serious eye damage/irritation: Lack of data.
- Sensitisation to the respiratory tract: Lack of data.
- Skin sensitisation: Lack of data.
- Germ cell mutagenicity/Genotoxicity: Lack of data.
- Carcinogenicity: Lack of data.
- Reproductive toxicity: Lack of data.
- Effects on or via lactation: Lack of data.
- Specific target organ toxicity (single exposure): Lack of data.
- Specific target organ toxicity (repeated exposure): Lack of data.
- Aspiration hazard: Lack of data.

Symptoms

Contact with the product can cause cold burns or frostbite.
Asphyxiant in high concentrations. Risk of heart circulatory collapse. risk of unconsciousness, death.
Symptoms: headache, dizziness, tinnitus, Accelerated respiration and heart rate, nausea, states of excitation, fatigue, unconsciousness, spasms.

12. Ecological information

Ecotoxicity

Further details: Global Warming potential (GWP): 1

Persistence and degradability

Further details: No data available

Bioaccumulative potential

Partition coefficient: n-octanol/water:

0.83 log P(o/w)

Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

Mobility in soil

not applicable

Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Waste treatment methods

Product

Recommendation: Blow-off to atmosphere in a well ventilated place. Do not release large quantities into the atmosphere.
Do not discharge into any place where its accumulation could be dangerous.

Package

Recommendation: Dispose of waste according to applicable legislation.
Return to the gas supplier.



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14. Transport information

Land transport (ADG)

Product designation: UN 1013, CARBON DIOXIDE
Class or division, Subsidiary risk: 2.2
Special Provisions: 378 392
Limited quantities: 120 mL
EQ: E1
Package - Instructions: P200

Sea transport (IMDG)

UN number: UN 1013
Proper shipping name: UN 1013, CARBON DIOXIDE
Class or division, Subsidiary risk: Class 2.2, Subrisk -
Packing Group: -
EmS: F-C, S-V
Special Provisions: 378 392
Limited quantities: 120 mL
Excepted quantities: E1
Package - Instructions: P200
Package - Provisions: -
IBC - Instructions: -
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: -
Tank instructions - Provisions: -
Stowage and handling: Category A.
Properties and observations: Liquefied, non-flammable gas. Heavier than air (1,5). Cannot remain in the liquid state above 31°C.
Marine pollutant: no
Segregation group: none

Air transport (IATA)

UN/ID number: UN 1013
Proper shipping name: UN 1013, CARBON DIOXIDE
Class or division, Subsidiary risk: Class 2.2
Hazard label: Non-flamm. gas
Excepted Quantity Code: E1
Passenger and Cargo Aircraft: Ltd.Qty.: Forbidden
Passenger and Cargo Aircraft: Pack.Instr. 200 - Max. Net Qty/Pkg. 75 kg
Cargo Aircraft only: Pack.Instr. 200 - Max. Net Qty/Pkg. 150 kg
Special Provisions: A202
Emergency Response Guide-Code (ERG): 2L

Further 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.
Secure gas cylinders before transport. Cylinder valve must be closed and leak-proof. Valve outlet cap nut or plug (where provided) must be correctly fitted. Valve protection device (where provide) must be correctly fitted.
Ensure adequate ventilation of the storage area.
Consider compliance with applicable regulations.

Hazchem-Code:

2T



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15. Regulatory information

National regulations - Australia

No data available

Further regulations, limitations and legal requirements

No data available

16. Other information

Take care of the national and local legal and statutory regulations.

The risk of suffocation is often overlooked and must be specifically highlighted when instructing the employees.

Text for labelling:

Asphyxiant in high concentrations.

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EN: European Standard
EQ: Excepted quantities
GWP: Global warming potential
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

Reason of change:

Changes in section 1: Address
General revision

Date of first version:

19/5/2014

Department issuing data sheet

Contact person:

see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.