Carbon Dioxide

Safety Data Sheet 10021714

This SDS conforms to Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals

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Section: 1. Product and Company Identification

1.1 Product Identifier

Product form	Substance
Product Name	Carbon dioxide
CAS No	124-38-9
Formula	100% CO_2
Other means of identification	Culligan Sparkling Gas, CARBON DIOXIDE, CO_2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substances/mixture	Beverage product dispensing. Use as directed.

1.3 Details of supplier of the safety data sheet

	Waterlogic Australia Pty Ltd Unit 15 / 167 Prospect Hwy, Seven Hills NSW 2147 Telephone 1300 88 14 14 service@culligan.com.au https://www.culligan.com.au/

1.4 Emergency telephone number

Emergency telephone number	+612 433 108 820 +612 431 501 701

Section: 2. Hazard Identification

2.1 Classification of the substance or mixture

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)	
Physical hazards	Gases under pressure – Liquefied gas – Warning – (CLP: Press. Gas) - H280/H281
Classification EC 67/548 or EC 1999/45	
	Not classified as dangerous substance/mixture.

2.2 Label elements

Labelling Regulation EC 1272/2008 (CLP)

Hazard Pictogram	
Hazard pictogram code	GHS04
Signal word	Warning
Hazard statement	H281 - Contains refrigerated gas; may cause cryogenic burns of injury H280 - Contains gas under pressure; may explode if heated
Precautionary statements	
Prevention	P202 - Do not handle until all safety precautions have been read and understood P261 - Avoid breathing gas

	P262 - Do not get in eyes, on skin, or on clothing
Response	P336+P315 - Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention.
Storage	P403 - Use and store in a well-ventilated place Keep container below 50°C

2.3 Other Hazards

Other hazards not contributing to the classification	Asphyxiant in high concentrations Contact with liquid may cause cold burns/frostbite

2.4 Unknown acute toxicity

No data available

Section: 3. Composition/Information on ingredients

3.1 Substance

Name: Carbon dioxide

Name	Content	CAS No	EC No	Annex No	Classification
Carbon Dioxide	100%	124-38-9	204-696-9	--------- *1	Not classified (DSD/DPD) Liq. Gas (H280/H281)

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

* 1: Listed in Annex IV / V REACH, exempted from registration.

* 2: Registration deadline not expired.

* 3: Registration not required: Substance manufactured or imported < 1t/y

Full text of R-phrases see chapter 16. Full text of H-statements see chapter 16

3.2 Mixture

N/A

Section: 4. First aid measures

4.1 Description of 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_2 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.
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.
Skin contact	MAY CAUSE FROSTBITE. For exposure to liquid, cold vapour, or solid carbon dioxide (dry ice), immediately warm frostbite area with warm water not to exceed 41°C. Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal colouring and sensations have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

Ingestion	Ingestion is not considered a potential route of exposure
4.2 Most important symptoms and effects, both acute and delayed	
	No additional information available
4.3 Indication of any immediate attention and special treatment needed	
	None

Section: 5. Firefighting measures

5.1 Extinguisher media	
Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
5.2 Special hazard arising from the substance or mixture	
Explosion hazard	Heat of fire can build pressure in container and cause it to rupture. Containers are equipped with a pressure relief device. No part of the container should be subjected to a temperature higher than 50°C.
Reactivity	No reactivity hazard other than the effects described in sub-sections below.
5.1 Advice for firefighters	
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. Move away from the container and cool with water from a protected position. If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire.
Special protective equipment for firefighters	In confined space use self-contained breathing apparatus.
Flammable class	Non-flammable.

Section: 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	
Personal precautions	WARNING! Liquid and gas under pressure. Rapid release of gaseous carbon dioxide through a valve can result in the formation of dry ice, which is very cold and can cause frostbite. Evacuate area. Use protective clothing. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.
6.2 Environmental precautions	
	Try to stop release. Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.
6.3 Methods and material for containment and cleaning up	
Clean up methods	Ventilate area. Prevent waste from contaminating the surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, provincial, and local regulations. If

	necessary, call your local supplier for assistance.

6.4 Reference to other sections

	See also sections 8 and 13.

Section: 7. Handling and Storage

7.1 Precautions for safe handling

Safe use of product	Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Only experienced and properly instructed persons should handle gases under pressure. The product must be handled in accordance with good industrial hygiene and safety procedures. Do not smoke while handling product. Ensure the complete gas system was (or is regularly) checked for leaks before use.
Safe handling of gas receptacle	Refer to supplier's container handling instructions. Do not allow back feed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving bulk cylinders/containers, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport bulk cylinders/containers. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. 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 contaminates particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.
General	Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Potential production of solid CO_2 particles must be ruled out. In order to rule out potential electrostatic discharge production, the system must be adequately grounded.
Handling	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.

7.2 Conditions for safe storage, including any incompatibilities

	Keep away from combustible materials. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. Stored containers should be periodically checked for general condition and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition.
Storage	Keep container below 50°C in a well ventilated place.

7.3 Specific end use

	None

Section: 8. Exposure control/personal protection

8.1 Control parameters

Occupational Exposure Limits
Carbon dioxide

- x Value 8h (CZ) [mg/m3] : 9000
- x ILV (EU) - 8 H - [mg/m³] : 9000
- x ILV (EU) - 8 H - [ppm] : 5000
- x TLV© -TWA [ppm] : 5000
- x TLV© -STEL [ppm] : 30000
- x AGW (8h) - Germany [mg/m³] TRGS 900 : 9100
- x AGW (8h) - Germany [ppm] TRGS 900 : 5000
- x MAK (AU) Tagesmittelwert (ml/m³) : 5000
- x MAK (AU) Tagesmittelwert (mg/m³) : 9000
- x MAK (AU) Kurzzeitwerte (ml/m³) : 10000
- x MAK (AU) Kurzzeitwerte (mg/m³) : 18000
- x VLA-ED - Spain [ppm] : 5000
- x VLA-ED - Spain [mg/m3] : 9150
- x VLA-EC - Spain [ppm] : 15000
- x VLA-EC - Spain [mg/m3] : 27400
- x NGV - [ppm] : 5000
- x NGV - [mg/m³] : 9000
- x KTV - [ppm] : 10
- x KTV - [mg/m³] : 10
- x HTP-värden (FI) - 8 H - [ppm] : 5000
- x HTP-värden (FI) - 8 H - [mg/m³] : 9100
- x Grænserværdier (DK) (ppm) : 5000
- x Grænserværdier (DK) (ppm) : 9000
- x Grænserværdier (DK) : 9000
- x GV Value Limit (Norway) [ppm] : 5000
- x GV Value Limit (Norway) [mg/m³] : 9000
- x 8-Hour TWA (PL) (NDS) (mg/m³) : 9000
- x 15-Minute STEL (PL)(NDSCh) (mg/m³) : 27000
- x Valori Limite di Soglia (IT) 8 ore [ppm] : 5000
- x Valori Limite di Soglia (IT) 8 ore [mg/m3] : 9000

	x TLV-TWA (Belgium) (ppm) : 5000 x TLV-STEL (Belgium) (ppm) : 30000 x Value 15min. (CZ) [mg/m3] : 45000 *In Australia, the recognised exposure limits for CO_2 reference an 8-hour Time Weighted Average (TWA) of 5,000 ppm and a 15 minute Short Term Exposure Limit (STEL) of 30,000 ppm. CO_2 at 40,000 ppm is considered Immediately Dangerous to Life or Health (IDLH).*
DNEL: Derived no effect level	None available
PNEC: Predicted no effect concentration	None available

8.2 Exposure control

8.2.1 Appropriate engineering control	Systems under pressure should be regularly checked for leakages. Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.
8.2.2 Individual protection measures, e.g. 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 and to select the PPE that matches the relevant risk. The following recommendations should be considered. Wear safety glasses with side shields Wear leather safety gloves and safety shoes when handling cylinders.
Personal protection	Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes.
8.2.3 Appropriate engineering control	Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Section: 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance - Physical state at 20°C / 101.3kPa	Liquefied gas
Colour	Colourless.
Odour	No odour warning properties.
Odour threshold	Odour threshold is subjective and inadequate to warn for overexposure.
pH value	Not applicable for gas-mixtures
Molar mass [g/mol]	Not applicable for gases and gas-mixtures.
Melting point [°C]	-56.6
Boiling point [°C]	-78.5 (s)
Critical temperature [°C]	30
Flash point [°C]	Not applicable for gas-mixtures.
Evaporation rate (ether=1)	Not applicable for gas-mixtures.
Flammability range [vol% in air]	Non-flammable
Vapour pressure [20°C]	57.3 bar Not applicable

Relative density, gas (air=1)	1.52
Relative density, liquid (water=1)	1.03
Solubility in water [mg/l]	2000
Partition coefficient n-octanol/water	Not applicable for gas-mixtures.
Viscosity at 20°C [mPa.s]	Not applicable.
Explosive Properties	Not applicable.
9.2 Other information	
Gas group	Liquefied gas
Additional information	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
Molecular weight	44

Section: 10. Stability and reactivity

10.1 Reactivity

Stability and reactivity	No reactivity hazard other than the effects described in sub-sections below. Stable under normal conditions. Liquid spillages can cause embrittlement of structural materials.

10.2 Chemical stability

	Stable under normal conditions

10.3 Possibility of hazardous reactions

	None

10.4 Conditions to avoid

	None

10.5 Incompatible materials

	None

10.6 Hazardous decomposition products

	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section: 11. Toxicological information

11.1 Information on toxicological effects

Toxicity information	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
Acute toxicity	No known toxicological effects from this product.
Rat inhalation LC50 [ppm/4h]	No data available.
Skin corrosion/irritation	No known effects from this product.
Serious eye damage/irritation	No known effects from this product.
Respiratory or skin sensitisation	No known effects from this product.
STOT-single exposure	No known effects from this product.
STOT-repeated exposure	No known effects from this product.

Aspiration hazard	Not applicable for gases and gas-mixtures

Section: 12. Ecological information

12.1 Toxicity

	No data available

12.2 Persistence – degradability

	No data available

12.3 Bioaccumulative potential

	No data available

12.4 Mobility in soil

	No data available

12.5 Results of PBT and vPvB assessment

	No data available

12.6 Other adverse effects

Ecological effects information	When discharged in large quantities may contribute to the greenhouse effect. Can cause frost damage to vegetation.
Effect on global warming	Contains greenhouse gas(es) not covered by 842/2006/EC
Global warming potential [CO2=1]	1

Section: 13. Disposal consideration

13.1 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. Refer to the code of practice of EIGA (Doc. 30/10 “Disposal of Gases, downloadable at http://www.eiga.org) for more guidance on suitable disposal methods. Contact supplier if guidance is required.
General	Do not discharge into any place where its accumulation could be dangerous. Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required.

13.2 Additional information

	None

Section: 14. Transport information

UN Number	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(es)	2
Classification code	2 A
Packing Instruction(s)	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
HAZCHEM - Emergency Action Code	2T 2 = Fine water spray. T = Recommended personal protective equipment: Full fire kit and breathing apparatus. Appropriate measures: dilute.
Sea transport (IMDG)	
Proper shipping name	CARBON DIOXIDE
Class	2.2
Emergency Schedule (EmS) - Fire	F-C
Emergency Schedule (EmS) - Spillage	S-V
Packing instruction	P200
Air transport (ICAO-TI/IATA-DGR)	
Proper shipping name (IATA)	CARBON DIOXIDE
Class	2.2
Passenger and Cargo Aircraft	Allowed.
Packing instruction - Passenger and Cargo Aircraft	200
Packing instruction - Cargo Aircraft only	200
Special precaution for user	
	x Avoid transport on vehicles where the load space is not separated from the driver's compartment. x 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. x Before transporting product containers : o Ensure there is adequate ventilation. o Ensure that containers are firmly secured. o Ensure cylinder valve is closed and not leaking. o Ensure valve outlet cap nut or plug (where provided) is correctly fitted. o Ensure valve protection device (where provided) is correctly fitted.
Labelling ADR	2.2: Non-flammable, non-toxic gas.
In case of spillage and/or leakage	Clean up even minor leaks or spills if possible without unnecessary risk

Other transport information	x Avoid transport on vehicles where the load space is not separated from the driver's compartment. x 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. x Before transporting product containers : o Ensure that containers are firmly secured. o Ensure there is adequate ventilation. o Compliance with applicable regulations.
Personal precautions	The driver shall not attempt to deal with any fire of the load.
Emergency action in case of accident	Stop the engine. No naked lights. No smoking. Mark roads and warns other road users. Keep public away from danger area. NOTIFY POLICE AND FIRE BRIGADE IMMEDIATELY.
Additional information	None

Section: 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

EU legislation	
Seveso directive 96/82/EC	Not covered.
National legislation	
	Ensure all national/local regulations are observed

15.2 Chemical Safety Assessment

	A CSA does not need to be carried out for this product

Section: 16. Other information

Indication of changes	Revised safety data sheet in accordance with commission regulation (EU) No 453/2010
Training advice	Asphyxiant in high concentrations. Receptacle under pressure. May cause frostbite. Keep container in a well-ventilated place. Do not breathe the gas. Ensure all national/local regulations are observed. The hazard of asphyxiation is often overlooked and must be stressed during operator training.
List of full text of H-statements in section 3	H280 - Contains gas under pressure; may explode if heated.
Further information	Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD. This Safety Data Sheet has been established in accordance with the applicable European Union legislation.
Note	This Safety Data Sheet has been established in accordance with the applicable European Union legislation.

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