

Material Safety Data Sheet

CARBON DIOXIDE (GAS & LIQUID)

Infosafe No.: LQ2CC
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Issued by: CHUBB FIRE & SECURITY

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name

CARBON DIOXIDE (GAS & LIQUID)

Company Name

CHUBB FIRE & SECURITY

Address

314 Boundary Road Dingley
Vic 3172 Australia

Emergency Tel.

1300 369 309 (Business hours: 24/7)

Telephone/Fax Number

Tel: +61 (3) 9264 9813

Fax: +61 (03) 9264 9751

Recommended Use

Carbon dioxide Fire Extinguisher

Other Names

Name	Product Code
FLAMEGUARD R CO2 FIRE EXTINGUISHER	
KIDDE CO2 FIRE EXTINGUISHER	

2. HAZARD IDENTIFICATION

Hazard Classification

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Gases under Pressure: Liquefied Gas

Risk Phrase(s)

Classified as hazardous according to criteria of NOHSC

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization

Liquefied Gas

Ingredients

Name	CAS	Proportion
Carbon Dioxide	124-38-9	>99.5-100 %

4. FIRST-AID MEASURES

Inhalation

Avoid becoming a casualty - to protect rescuer, use air-viva, oxy-viva or one-way mask. Remove affected person from contaminated area - Apply artificial respiration if not breathing. Do not give direct mouth to mouth resuscitation. Resuscitate in a well ventilated area. Seek IMMEDIATE medical attention. Note: in confined space - DO NOT ATTEMPT RESCUE WITHOUT ADEQUATE RESPIRATORY PROTECTION.

Ingestion

Not considered a potential route of exposure.

Skin

Remove all contaminated clothing immediately. Clothing frozen to the skin should be thawed before being removed. Wash affected area thoroughly with soap and water. For Frostbite: Flush affected areas with lukewarm water. Do not use hot water. Treat as thermal burns. Seek IMMEDIATE medical attention.

Eye

If eye tissue is frozen, seek IMMEDIATE medical attention. If tissue is not frozen, immediately irrigate with copious amounts of water for at least 15 minutes. Remove contact lenses. Eyelids to be held open. Seek medical attention.

First Aid Facilities

Eye wash fountain, safety shower and normal washroom facilities.

Advice to Doctor

The medical doctor must be warned that the person has been exposed to anoxic conditions.

Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use an extinguishing agent suitable for the surrounding fire.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes including carbon dioxide and carbon monoxide.

Specific Hazards

This product is non combustible. However heating can cause expansion or decomposition leading to violent rupture of containers. Cylinders may explode when heated or may become a projectile in a fire.

Decomposition Temperature

Not available

Precautions in connection with Fire

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. In case of fire the product may be violently or explosively reactive. If safe to do so, remove containers from path of fire. Keep containers and fire-exposed surfaces cool with water spray. This product should be prevented from entering drains and watercourses.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Remove all sources of ignition. Increase ventilation. Evacuate all unprotected personnel. Use self-contained breathing apparatus (S.C.B.A) and full protective clothing to minimise exposure. Allow gas to vent safely to atmosphere, preferably in well ventilated, remote location. Monitor oxygen concentration in confined spaces. Check for leaks using pressure drop test or soapy water on joints and outlets. Shut cylinder valve to stop leak if possible and safe to do so. Check gas concentration to ensure area is safe before removing protective equipment. Damaged gas cylinders should be returned to the supplier.

If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on cylinder or cylinder valve, contact the supplier.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use in a well ventilated area. Wear appropriate protective equipment. Maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities. Do NOT puncture, cut or heat containers as they may contain hazardous residues. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet facilities.

DO NOT enter confined spaces where gas may have collected. 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.

Conditions for Safe Storage

Protect containers against physical damage. Store in a cool, dry, well-ventilated place, low fire risk area. Protect from extremes of temperature and weather. Do not allow any part of a cylinder to be exposed above 52°C. Storage areas should be kept clean and free from flammable materials. Ensure that containers are properly vented to prevent build up of pressure.

For information on the design of the storeroom, reference should be made to Australian Standard AS 4332 The storage and handling of gases in cylinders. Reference should also be made to all Local, State and Federal regulations.

Storage Temperatures

Do not store at temperatures over 52°C or in direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed below:

Carbon dioxide

TWA: 5000 ppm, 9000 mg/m³

STEL: 30000 ppm, 54000 mg/m³

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

Biological Limit Values

No biological limits allocated.

Engineering Controls

Provide sufficient ventilation to keep airborne levels below the exposure limits. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required. Refer to AS 2865 Australian Standard Safe working in a confined space, for further information concerning ventilation requirements.

Respiratory Protection

Maintain oxygen levels above 19.5% in the workplace. If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapour/mist filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

Safety glasses with full face shield, side shields or goggles as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective clothing should be worn e.g. cotton overalls buttoned at neck and wrist. When large quantities are handled the use of chemical resistant apron, metal cap and safety boots is recommended.

Other Information

Carbon dioxide is an asphyxiant gas which when present in an atmosphere in high concentration, leads to reduction of oxygen concentration by displacement or dilution. It is not appropriate to recommend an exposure standard for each simple asphyxiant, rather it should be required that a sufficient oxygen concentration be maintained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Liquefied Gas	Appearance	Gas or liquefied gas
Odour	Odourless	Decomposition Temperature	Not available
Melting Point	Sublimation temperature: -78.5°C	Boiling Point	-78.55°C
Solubility in Water	Partially soluble in cold water	Specific Gravity	1.56 (Air=1)
pH Value	Not available	Vapour Pressure	Not available
Vapour Density (Air=1)	1.53(Air=1)	Evaporation Rate	Not available
Odour Threshold	Not available	Viscosity	Not available
Colour	Colourless	Octanol/Water Partition Coefficient	Not available
Flash Point	Not applicable	Flammability	Non flammable
Auto-Ignition Temperature	Not applicable	Flammable Limits - Lower	Not applicable
Flammable Limits - Upper	Not applicable		

Other Information

Critical temperature: 30.9°C

10. STABILITY AND REACTIVITY

Stability and reactivity

Reacts with incompatibles.

Chemical Stability

Stable under normal conditions of storage and handling. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn.

Conditions to Avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Strong oxidising agents.

Hazardous Decomposition Products

Under fire conditions this product may emit toxic and/or irritating fumes including carbon dioxide and carbon monoxide.

Hazardous Reactions

Not available

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this product.

Inhalation

Inhalation of this product may cause dizziness, an irregular heartbeat, narcosis, nausea or asphyxiation.

Ingestion

Ingestion of liquid can cause similar to frostbite. Since the product is a gas, it will probably be inhaled rather than ingested.

Skin

May be irritating to skin. The symptoms may include redness, itching and swelling. May cause frostbite injuries to skin due to uncontrolled release of compressed gas resulting in redness, tissue destruction.

Eye

May be irritating to eyes. The symptoms may include redness, itching and tearing. May cause frostbite injuries to eyes due to uncontrolled release of compressed gas resulting in stinging, tearing, blurred vision and possibly permanent damage to eyes.

Reproductive Toxicity

Not considered to be toxic to reproduction.

Carcinogenicity

Not considered to be a carcinogenic hazard.

Skin Sensitisation

Not expected to be a skin sensitiser.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No ecological data are available for this material.

Persistence / Degradability

This gas is released as is in the atmosphere.

Mobility

Not available

Bioaccumulative Potential

Not available

Other Adverse Effects

Not available

Environmental Protection

Prevent this material entering waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Disposal considerations

The disposal of the waste material and the empty containers must be done in accordance with applicable local and national regulations.

'Empty' containers retain residue (liquid and/or vapour) and can be dangerous. Do not attempt to clean since residue is difficult to remove. Do not pressurise, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks and other sources of ignition. They may explode and cause injury or death. All containers should be returned to the supplier. Privately owned containers no longer required, should be disposed of in an environmentally safe manner, and in accordance with applicable regulations.

14. TRANSPORT INFORMATION

Transport Information

Road and Rail Transport (ADG Code):

This material is classified as Dangerous Goods Division 2.2 - Non-flammable Non-toxic Gases according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Division 2.2 Dangerous Goods are incompatible in a placard load with any of the following:

- Class 1, Explosives

Division 2.1 Flammable Gases when the Division 2,2 gas has a subsidiary risk 5.1 except when all are packed in cylinders or pressure drums not exceeding 500L capacity.

Division 2.3 Toxic Gases when the Division 2,2 gas has a subsidiary risk 5.1 except when all are packed in cylinders or pressure drums not exceeding 500L capacity.

- Division 4.2, Spontaneously Combustible Substances

- Division 5.2, Organic Peroxides

Marine Transport (IMO/IMDG):

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Division: 2.2

EmS: F-C,S-V

UN-No: 1044

Special Provisions: 225

Proper Shipping Name: Fire extinguishers with compressed or liquefied gas

Air Transport (ICAO/IATA):

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

Division: 2.2

Packaging Instructions (cargo only): 213

Packaging Instructions (passenger & cargo): 213

Special Provisions: A19

UN-No: 1044

Proper Shipping Name: Fire extinguishers with compressed or liquefied gas

U.N. Number

1044

Proper Shipping Name

FIRE EXTINGUISHERS

DG Class

2.2

Special Precautions for User

Not available

IERG Number

08

IMDG Marine pollutant

No

15. REGULATORY INFORMATION

Regulatory information

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule

Not Scheduled

Australia (AICS)

All components of this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempted.

16. OTHER INFORMATION

Date of preparation or last revision of MSDS

SDS reviewed: July 2016

Supersedes: May 2013

References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.

Standard for the Uniform Scheduling of Medicines and Poisons.

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work Australia.

American Conference of Industrial Hygienists (ACGIH).

Globally Harmonised System of classification and labelling of chemicals.

END OF SDS

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