Safety Data Sheet

CARBON DIOXIDE (CYLINDER)

Issue Date 03 APR 2018 **Status** ISSUED BY: Fire Protection Technologies

1. PRODUCT IDENTIFICATION

Product identifier

Product Name	Carbon Dioxide (Cylinder)
Synonyms	Carbon Dioxide, Compressed, Supagas Carbon Dioxide

Uses and uses advised against

Uses CALIBRATION ● CARBONATING/ PRESSURE DISPENSING ● FIRE FIGHTING ● FOOD PACKAGING ● WELDING

Supplier

Fire Protection Technologies
1/251 Ferntree Gully Road
Mount Waverley VIC 3149
Phone 1300 742 296
Fax (03) 9543 9109

Emergency telephone numbers 1300 742 296

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS (GHS ONLY) ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classifications

Gases Under Pressure: Liquefied gas Aquatic Toxicity (Chronic): Category 4

GHS Label elements

Signal word WARNING

Pictograms

Hazard statements

H280	Contains gas under pressure, may explode if heated.
H413	May cause long lasting harmful effects to aquatic life.

Prevention statements

P273	Avoid release to the environment

Response statements

None allocated.

Storage statements

P410 + P403 Protect from sunlight. Store in a well ventilated place.

Disposal Statement

P501 Dispose of contents/container in accordance with relevant regulations.

Other hazards

In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns/frostbite

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CARBON DIOXIDE	124-38-9	204-696-9	>99.9%

4. FIRST AID MEASURES

Description of first aid measures

Eye Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self-Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available.

Skin Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention

Ingestion Ingestion is not considered a potential route of exposure

First aid facilities Non allocated

Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury. Low concentrations of CO2 cause increased respiration and headache.

Immediate medical attention and special treatment needed

Treat for asphyxia and cold burns.

5. FIRE FIGHTING MEASURES

Extinguishing media

Use water fog to cool containers from protected area.

Special hazards arising from the substance or mixture

Non flammable

Advice for firefighters

Temperatures in a fire may cause liquid vessels and related equipment to rupture. Storage vessels may contain fine particle insulation materials or foam products which may be hazardous or release hazardous decomposition products in a fire. Cool vessels exposed to fire by applying water from a protected location. Do not approach vessels suspected of being hot. Evacuate area if unable to keep vessels cool.

Hazchem code

2TE

2 Fine Water Spray.

T Wear full fire kit and breathing apparatus. Dilute spill and run-off.

E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

Conditions for safe storage, including any incompatibilities

Refer to vessel operating instructions. Do not store near incompatible substances, heat or ignition sources and foodstuffs. Portable liquid containers should be stored: upright, prevented from falling, in a secure area; below 45°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

Specific end uses

No information provided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Carbon dioxide	SWA (AUS)	5000	9000	30000	54000
Carbon dioxide in coal mines	SWA (AUS)	12500	22500	30000	54000

Biological limits
No biological limit values have been entered for this product.

Exposure controls

Engineering controls — Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face Wear safety glasses.
Hands Wear leather or insulated gloves
Body Wear coveralls
Respiratory Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	COLOURLESS GAS (LIQUEFIED UNDER PRESSURE)
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	IMMEDIATE
PH	NOT AVAILABLE
Vapour density	1.53 (Air = 1)
Specific gravity	1.02
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	6,300 kPa @ 25°C
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE

Information on basic physical and chemical properties

Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

Chemical stability
Stable under recommended conditions of storage.

Possibility of hazardous reactions
Polymerization will not occur.

Conditions to avoid
Avoid contact with incompatible substances.

Incompatible materials
Moist carbon dioxide is corrosive, hence acid resistant materials are required (e.g. stainless steel). Certain properties of some plastics and rubbers may be affected by carbon dioxide (i.e. embrittlement, leaching of plasticisers, etc).

Hazardous decomposition products
May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met. Low concentrations of carbon dioxide cause increased respiration and headache.
Skin	Not classified as a skin irritant. Contact with dry ice powder may cause frostbite injury or cold burns.
Eye	Not classified as an eye irritant. Contact with dry ice powder may cause frostbite injury or cold burns.
Sensitisation	Not classified as causing skin or respiratory sensitization.
Mutagenicity	Not classified as a mutagen
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as a reproductive toxin. Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in

	dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure..
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

Toxicity
May cause long-term adverse effects in the environment.

Persistence and degradability
Not expected to be persistent in the aquatic environment.

Bioaccumulative potential
Bioaccumulation is not expected

Mobility in soil
The substance is a gas, not applicable.

Other adverse effects
When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste disposal	Ensure all liquid and gas supply valves are shut. Notify the manufacturer that you will be returning the portable liquid container. Residual product will be disposed of under the manufacturer's supervision.
Legislation	Dispose of in accordance with relevant local legislation

14. TRANSPORTATION INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1013	1013	1013
14.2 Proper Shipping Name	CARBON DIOXIDE	CARBON DIOXIDE	CARBON DIOXIDE
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None allocated.	None allocated.	None allocated.

Environmental hazards
No information provided.

Special precautions for user

Hazchem code	2TE
GTEPG	2C2
EMS	F-C, S-V
Other information	Transport on open top vehicles in accordance with Australian Code for the Transport of Dangerous Goods

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals
The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes N Dangerous for the environment

Risk phrases	R58	May cause long term adverse effects in the environment
Safety phrases	S2	Keep out of reach of children
	S3	Keep in a cool place
	S9	Keep container in a well ventilated place
	S36	Wear suitable protective clothing.
	S38	In case of insufficient ventilation, wear suitable respiratory equipment.

Inventory listings **AUSTRALIA: AICS (Australia Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide IARC International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre OEL Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average