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## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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### 1.1 Product identifier

**Product name** CARBON DIOXIDE, COMPRESSED  
**Synonyms** CARBON DIOXIDE • CO2 • PRODUCT CODES: A2000 • R744 (CO2 REFRIGERANT)

### 1.2 Uses and uses advised against

**Uses** INDUSTRIAL APPLICATIONS • SHIELDING GAS

### 1.3 Details of the supplier of the product

**Supplier name** Industrial Gases New Zealand Ltd t/a Eziswap Gas  
**Address** 6 and 10 Canaveral Drive, Rosedale, Auckland, NEW ZEALAND  
**Telephone** +64 9 444 0357  
**Fax** +64 9 444 3509  
**Email** [sales@eziswapgas.co.nz](mailto:sales@eziswapgas.co.nz)  
**Website** <http://www.eziswapgas.co.nz>

### 1.4 Emergency telephone numbers

**Emergency** 111 (NZ only)

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## 2. HAZARDS IDENTIFICATION

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### 2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO HAZARDOUS SUBSTANCES [CLASSIFICATION] REGULATIONS 2001

#### HSNO classifications

Compressed gases Contains gas under pressure; may explode if heated.

### 2.2 GHS Label elements

**Signal word** WARNING

#### Pictograms



#### Hazard statements

H280 Contains gas under pressure; may explode if heated.

#### Prevention statements

P103 Read label before use.

#### Response statements

None allocated.

#### Storage statements

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

#### Disposal statements

None allocated.

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**2.3 Other hazards**

No information provided.

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**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

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**3.1 Substances / Mixtures**

Ingredient	CAS Number	EC Number	Content
CARBON DIOXIDE	124-38-9	204-696-9	99.8%
OXYGEN	7782-44-7	231-956-9	<0.01%
WATER	7732-18-5	231-791-2	<0.008%

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**4. FIRST AID MEASURES**

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**4.1 Description of first aid measures**

**Eye** None required.

**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** None required.

**Ingestion** Ingestion is not considered a potential route of exposure. If dry ice powder is swallowed, drink large volumes of water and seek immediate medical attention.

**First aid facilities** None allocated.

**4.2 Most important symptoms and effects, both acute and delayed**

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO2 cause increased respiration and headache.

**4.3 Immediate medical attention and special treatment needed**

Treat symptomatically.

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**5. FIRE FIGHTING MEASURES**

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**5.1 Extinguishing media**

Use water fog to cool containers from protected area.

**5.2 Special hazards arising from the substance or mixture**

Non flammable.

**5.3 Advice for firefighters**

Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot.

**5.4 Hazchem code**

2T  
2 Fine Water Spray.  
T Wear full fire kit and breathing apparatus. Dilute spill and run-off.

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**6. ACCIDENTAL RELEASE MEASURES**

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**6.1 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.

**6.2 Environmental precautions**

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

**6.3 Methods of cleaning up**

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

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### 6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Use of safe work practices are recommended to avoid inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

### 7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored 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.

### 7.3 Specific end uses

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Carbon dioxide	WES (NZ)	5000	9000	30000	54000

#### Biological limits

No biological limit values have been entered for this product.

### 8.2 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

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



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	COLOURLESS GAS
<b>Odour</b>	ODOURLESS
<b>Flammability</b>	NON FLAMMABLE
<b>Flash point</b>	NOT RELEVANT
<b>Boiling point</b>	NOT AVAILABLE
<b>Melting point</b>	NOT AVAILABLE
<b>Evaporation rate</b>	NOT APPLICABLE
<b>pH</b>	NOT APPLICABLE
<b>Vapour density</b>	NOT AVAILABLE
<b>Specific gravity</b>	NOT APPLICABLE
<b>Solubility (water)</b>	0.759 cm <sup>3</sup> /cm <sup>3</sup>
<b>Vapour pressure</b>	6000 kPa @ 25°C
<b>Upper explosion limit</b>	NOT RELEVANT

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### 9.1 Information on basic physical and chemical properties

Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

### 9.2 Other information

% Volatiles	100 %
Density	1.84 g/L @ 20°C

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## 10. STABILITY AND REACTIVITY

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### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization will not occur.

### 10.4 Conditions to avoid

Avoid contact with incompatible substances.

### 10.5 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). The manufacturer reports that dusts of aluminium, chrome and manganese may ignite and explode when heated in carbon dioxide. Also incompatible with acrylaldehyde, aziridine, metal acetylide and sodium peroxide.

### 10.6 Hazardous decomposition products

This material will not decompose to form hazardous products other than that already present.

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## 11. TOXICOLOGICAL INFORMATION

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### 11.1 Information on toxicological effects

<b>Acute toxicity</b>	Based on available data, the classification criteria are not met. Low concentrations of carbon dioxide cause increased respiration and headache.
<b>Skin</b>	Not classified as a skin irritant.
<b>Eye</b>	Not classified as an eye irritant.
<b>Sensitisation</b>	Not classified as causing skin or respiratory sensitisation.
<b>Mutagenicity</b>	Not classified as a mutagen.
<b>Carcinogenicity</b>	Not classified as a carcinogen.
<b>Reproductive</b>	Not classified as a reproductive toxin.
<b>STOT - single exposure</b>	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
<b>STOT - repeated exposure</b>	Not classified as causing organ damage from repeated exposure.
<b>Aspiration</b>	Not classified as causing aspiration.

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## 12. ECOLOGICAL INFORMATION

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### 12.1 Toxicity

No information provided.

### 12.2 Persistence and degradability

No information provided.

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**12.3 Bioaccumulative potential**

No information provided.

**12.4 Mobility in soil**

No information provided.

**12.5 Other adverse effects**

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

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**13. DISPOSAL CONSIDERATIONS**

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**13.1 Waste treatment methods**

**Waste disposal**           Cylinders should be returned to the manufacturer or supplier for disposal of contents.  
**Legislation**             Dispose of in accordance with relevant local legislation.

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**14. TRANSPORT INFORMATION**

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**CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA**



	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
<b>14.1 UN Number</b>	1013	1013	1013
<b>14.2 Proper Shipping Name</b>	CARBON DIOXIDE	CARBON DIOXIDE	CARBON DIOXIDE
<b>14.3 Transport hazard class</b>	2.2	2.2	2.2
<b>14.4 Packing Group</b>	None allocated.	None allocated.	None allocated.

**14.5 Environmental hazards**

No information provided.

**14.6 Special precautions for user**

**Hazchem code**           2T  
**EMS**                     F-C, S-V  
**Other information**        Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.

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**15. REGULATORY INFORMATION**

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

**Approval code**           HSR001018  
**Group standard**         Carbon dioxide  
**Inventory listings**       **NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals)**  
All components are listed on the NZIoC inventory or are exempt.

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**16. OTHER INFORMATION**

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**Additional information**    Some applications for compressed carbon dioxide include shielding arc welding, sparging, foundry sand mould curing and firefighting (fire extinguishers).  
  
APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

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**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
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m <sup>3</sup>	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)
TLV	Threshold Limit Value
TWA	Time Weighted Average

**Prepared by**

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