



## Material Safety Data Sheet

# Carbon Dioxide, compressed

### 1. MATERIAL IDENTIFICATION AND SUPPLIER

**Supplier name:** Supagas 2009 limited

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**Web Site:** <http://www.supagas.co.nz>

**Use(s)** Shielding gas for welding, gas chromatography, industrial applications, metal refining.

**Synonym(s)** CARBON DIOXIDE, COMPRESSED

**MSDS Date** 9 June 2010

### 2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO THE CRITERIA IN THE HS (MIN DEG OF HAZARD) REGS 2001

#### HAZARD CLASSIFICATION

Not Hazardous

#### SUBSIDIARY RISK

Contains gas under pressure, may explode if heated.

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO NZS 5433

UN No. 1013

**Pkg Group:** None Allocated

**DG Class:** 2.2

**Hazchem Code:** 2RE

**Hazard Risk(s):** Ruptured cylinders may rocket.

**EPG:** 2C1

### 3. COMPOSITION

Ingredients	Formula	CAS no.	Content
Carbon Dioxide	CO <sub>2</sub>	124-38-9	100%

#### 4. FIRST AID MEASURES

<b>Eye</b>	Immediately flush eyes with water for 15 minutes.
<b>Skin</b>	Not irritating to the skin.
<b>Inhalation</b>	Carbon Dioxide is non-toxic at normal temperature and pressure. However when the introduction of Carbon Dioxide is forcing the oxygen levels to deplete it can act as an asphyxiant. It is important to have a well ventilated factory/workshop. If inhalation has taken place be sure to not put yourself in harm's way, wear a self contained breathing apparatus and remove the person from the affected area and seek urgent medical attention. Give oxygen if available.
<b>Ingestion</b>	Ingestion is considered unlikely. However, should ingestion occur, drink large volumes of water and seek urgent medical attention. For further information contact a Poison Information Centre on 0800764 766 (0800 POISON) or +643 479 7248 or a doctor.
<b>Advice to Doctor</b>	Advise the doctor that the victim has been exposed to Carbon Dioxide and an oxygen deficient atmosphere.

#### 5. FIRE FIGHTING MEASURES

##### Fire and Explosion

Non flammable gas. Temperatures in a fire may cause cylinders to rupture. Call fire brigade. Do not approach cylinders suspected to be hot. Cool cylinders exposed to fire from a safe location by applying water.

##### Extinguishing

Non flammable. Use water fog to cool containers from protected area.

##### Flammability

Non flammable

Hazchem Code 2RE

#### 6. ACCIDENTAL RELEASE MEASURES

**Spillage** GAS CYLINDERS: If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and if safe to do so carefully move it to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.

**Personal protection:** Persons moving cylinders should be provided with safety footwear, safety glasses and leather or PVC gloves. Full cover overalls are recommended. All personal protective equipment must be free from oil and grease. In areas where high exposure of carbon dioxide ensure you have adequate ventilation and have correct respiratory equipment on hand.

#### 7. STORAGE AND HANDLING

##### **Storage**

Storage of compressed gases should be in compliance with HSNO regulations. Cylinders should be stored away from ignition sources and in a cool, dry well ventilated area out of direct sunlight and away from heat. Cylinders should be stored in an upright position on a firm level floor concrete preferably, secured by a solid fixed chain and separate from empties.

##### **Handling**

Before use read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Only experienced and properly instructed personnel should handle compressed gases, should you need instruction please contact Supagas immediately.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure Standards</b>	Carbon Dioxide is a simple asphyxiant. Ensure there is ample ventilation. TWA 5,000 ppm V/V STEL 30,000 ppm V/V
<b>Engineering Controls</b>	Use only properly specified equipment which is suitable for this product, its pressure and temperature. Provide suitable extraction and ventilation for the influenced areas.
<b>Personal Protection Equipment</b>	Wear safety glasses, leather gloves and safety boots. Where an inhalation risk is evident wear the correct respiratory gear.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance :</b> Colourless gas	<b>Solubility (Water) :</b> 1.716 m3/kg
<b>Odour:</b> Sharp odour	<b>Specific gravity:</b> 1.53
<b>PH:</b> Not Available	<b>% Volatiles :</b> Not Available
<b>Vapour pressure:</b> 5090kpa @ 15°C	<b>Flammability:</b> Non Flammable
<b>Vapour Density:</b> Not Available	<b>Flash point:</b> Not relevant
<b>Boiling point:</b> Not Available	<b>Upper explosion limit:</b> Not Relevant
<b>Melting point:</b> not available	<b>Lower explosion limit:</b> not relevant
<b>Evaporation rate;</b> not available	<b>Autoignition Temperature:</b> not available
<b>Critical Temperature:</b> 31.06°C	<b>Density:</b> 1.691 kg/m3

## 10. STABILITY AND REACTIVITY

### Reactivity

Avoid heating cylinders. Hazardous byproducts may be produced when this gas /gas mixture is used in welding, cutting and associated processes. May embrittle certain materials used in the association of this product. No known incompatible substances – inert gas.

### Decomposition Products

May evolve toxic gases if heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### Health Hazard Summary

Asphyxiant gas. Symptoms of exposure are directly related to displacement of oxygen from air. As the influence of the gas is increased and oxygen levels begin to diminish the pulse rate will accelerate and the rate of breathing will increase. The ability to maintain attention and think clearly is diminished, muscular co-ordination is disturbed. As the exposure is increased and oxygen is decreased poor judgement becomes evident and severe injuries may occur, the ability to feel pain will not be lost. Further reduction may cause nausea and vomiting. Below 10 % oxygen levels may cause death.

### Eye

Immediately flush eyes with water for 15 minutes

Vapours may cause irritation.

### Inhalation

Non-irritant – Asphyxiant. Effects are proportional to oxygen displacement.

### Skin

Non irritating.

**Ingestion**

Due to product form, ingestion is considered highly unlikely.

**Toxicity Data**

No LD50 data available for this product.

**12. ECOLOGICAL INFORMATION**

**Environment**

Atmospheric gas, Carbon Dioxide is a natural component of the earth's atmosphere, this however has shown to be a link to global warming and a contributing factor to the increase in global warming. The emission of Carbon Dioxide into the atmosphere should be minimised as far as possible.. Not toxic to plants or animals except at extremely high levels. Fumes from the welding process which use this gas/gas mixture may be harmful to the environment.

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal** Cylinders should be returned to the manufacturer or supplier for disposal of contents.

**Legislation** Dispose of in accordance with relevant local legislation.

**14. TRANSPORT INFORMATION**

**Transport**

Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.



**CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO NZS 5433**

Shipping Name :Carbon Dioxide, Compressed

UN No. 1013	DG Class: 2.2	Subsidiary Risk(s): None Allocated
Pkg Group: None Allocated	Hazchem Code: 2RE	EPG: 2C1

**15. REGULATORY INFORMATION**

**Group Name: Carbon Dioxide**

The "HASNO" act 1996 and hazardous substances (compressed gases) regulations 2004

## 16. OTHER INFORMATION

### Additional Information

Carbon Dioxide is supplied compressed in high pressure cylinders. This gas/gas mixture is used in the welding process and is supplied to the end user in a Grey cylinder with a green painted neck. It is used in the welding process typically with Flux cord. It is also used with other gases to create mixes for industrial purposes.

**APPLICATION METHOD:** Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

### ABBREVIATIONS:

mg/m<sup>3</sup> - Milligrams per cubic metre

ppm - Parts Per Million

TWA/ES - Time Weighted Average or Exposure Standard.

CNS - Central Nervous System

NOS - Not Otherwise Specified

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

M - moles per litre, a unit of concentration.

IARC - International Agency for Research on Cancer.

HSNO –Hazardous substances and new organisms act 1996.

### PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only.

Factors such as 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: 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.

This MSDS summarises to our best knowledge, at the date of issue, the health and safety hazard information regarding this product and general guidance on how to safely handle the product in the workplace. All due care has been taken to include accurate and up-to-date information in this MSDS.

Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Supagas 2009 Ltd. As far as lawfully possible, no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS can be accepted. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is available on request. This MSDS has been prepared in accordance with NZCIC Code of Practice - Preparation of Safety Data Sheets. This MSDS is subject to change without notice, for the latest version of this MSDS visit [www.supagas.co.nz](http://www.supagas.co.nz)

Reviewed 9 June 2010.