



Material Safety Data Sheet

Carbon Dioxide, Solid

1. MATERIAL IDENTIFICATION AND SUPPLIER

Supplier name: Supagas 2009 limited
Address: 141 Roscommon Road, Manukau, Auckland, New Zealand
Telephone: 09 278 0145
Fax: 09 278 5672
Emergency: 111
Email: enquiries@supagas.co.nz
Web Site: <http://www.supagas.co.nz>
Use(s) Food freezing, refrigerated transport, dry ice blasting.
Synonym(s) CARBON DIOXIDE, SOLID AKA: DRY ICE

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

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO NZS 5433

UN No. 1845

Pkg Group: None Allocated

DG Class: 9

Hazchem Code: 2T

Hazard Risk(s): None Allocated

3. COMPOSITION

Ingredients	Formula	CAS no.	Content
Carbon Dioxide	Co2	124-38-9	100%

4. FIRST AID MEASURES

Eye	Can cause severe cold burn if brought in contact with eye.
Skin	Can cause severe cold burn if brought in contact with the skin.
Inhalation	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.
Ingestion	Ingestion is considered unlikely. However, should ingestion occur, this could cause thermal burns to the throat & stomach, 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.
Advice to Doctor	Advise the doctor that the victim has been exposed to Carbon Dioxide and an oxygen deficient atmosphere. Specialist advice for treatment of cryogenic burns is available at a burns Unit.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Carbon dioxide is Non flammable. Dry ice vapours could be harmful in large quantities ensure correct breathing apparatus is on hand in case of a situation. Carbon dioxide may serve to extinguish the fire. Bulk container may rupture under extreme temperatures.

Extinguishing

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

Flammability

Non flammable

Hazchem Code 2T

6. ACCIDENTAL RELEASE MEASURES

Spillage Ventilate area, Stop the leak if safe to do so. Allow gas to dissipate to atmosphere. Cold vapours are heavier than air. Wear appropriate Personal protection gear.

Personal protection: Persons operating machinery and handling Dry Ice 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

Keep dry ice in a non sealed container in a well ventilated place. Supplied in polystyrene bins or large insulated bins holding up to 400kgs.

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 Carbon dioxide solid, should you need instruction please contact Supagas immediately.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Frosty white, solid shape	Solubility (Water) : 1.716 m3/kg
Odour : Sharp odour	Specific gravity : Not Available
Sublimation Temperature : -78.5°C	% Volatiles : Not Available
Vapour pressure : Not Available	Flammability : Non Flammable
Vapour Density : Not Available	Flash point : Not relevant
Boiling point : Not Available	Upper explosion limit : Not Relevant
Melting point : not available	Lower explosion limit : not relevant
Evaporation rate ; not available	Autoignition Temperature : not available
Critical Temperature : 31.06°C	Density : 1.873 kg/m3

10. STABILITY AND REACTIVITY

Flammability

Non Flammable. Contains refrigerated gas; may cause cryogenic burns or injury.

Materials Compatibility

No known incompatible substances – inert gas.

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

May cause severe thermal burns if brought in contact with.

Inhalation

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

Skin

May cause thermal burns if contact with skin.

Ingestion

Can cause cold burn if swallowed.

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. Can cause frost damage to vegetation.

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, Solid

UN No. 1845	DG Class: 9	Subsidiary Risk(s): None Allocated
Pkg Group: None Allocated	Hazchem Code: None Allocated	

15. REGULATORY INFORMATION

Group Name: Carbon Dioxide, Solid

16. OTHER INFORMATION

Additional Information

ABBREVIATIONS:

mg/m³ - 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

Reviewed 9 June 2010.