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## MATERIAL SAFETY DATA SHEET

Product Name:

METHANE,  
Compressed (CH<sub>4</sub>)

Issued: May 2014

Revision: 9

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Label 2.1 : flammable  
gas.

### IDENTIFICATION

<b>Chemical Name:</b>	Methane
<b>Synonyms:</b>	Methyl hydride, Marsh gas, Fire damp.
<b>UN Number:</b>	1971
<b>Poisons Schedule Number:</b>	None allocated
<b>EPG (Emergency Procedure Guide):</b>	AS 1678 2A1

**Use:** Lighting, Heating.

### HAZARDS IDENTIFICATION

**Dangerous Goods Class and Subsidiary Risk:** 2.1

**HSNO Classification:** 2.1.1A

**Hazard Statement:** Extremely flammable gas.  
Explosive; fire, blast or projection hazard.

**Precautionary Statements:** Read before label before use.  
Read material safety data sheet before use.  
Keep away from heat, sparks, open flames and hot surfaces.  
No smoking.  
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
Eliminate all ignition sources if safe to do so.  
Store in a well ventilated place.

### COMPOSITION

Ingredients	CAS Number	Proportion
Chemical Entity Methane	74-82-8	100%

### FIRST AID MEASURES

#### Health Effects

##### Acute

Swallowed: Not applicable to gases.  
Eye: Not irritating to the eye.  
Skin: Not irritating to the skin.

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**Inhaled:** Methane is non-toxic but asphyxiant in high concentrations. By diluting the oxygen concentration in air below the level necessary to support life, it can act as an asphyxiant. Effects of oxygen deficiency are: 12-16%: breathing and pulse rate increased, muscular coordination slightly disturbed; 10-14%: emotional upset, abnormal fatigue, disturbed respiration; 6-10%: nausea and vomiting, collapse or loss of consciousness; below 6%: convulsive movements, possible respiratory collapse and death.

**Chronic**

Long term exposure to methane has no known health effects. Prolonged exposure to an oxygen deficient atmosphere (below 18% oxygen in air) may affect the heart and nervous system.

**First Aid**Inhaled:

Call doctor. If victim is conscious: Move to uncontaminated area to breathe fresh air. Keep warm and quiet. If victim is unconscious: Move to uncontaminated area and give assisted respiration. When normal breathing restored, treatment as above. Continued treatment should be symptomatic and supportive.

Skin Contact:

Remove contaminated clothing and shoes immediately – clothing frozen to the skin should be thawed before removed – In case of frostbite, thaw with lukewarm water.

Eye Contact:

If eyes become affected gently flood with tap water for at least 15 minutes.

**Advice to Doctor**

Advise doctor that victim has been exposed to an oxygen deficient atmosphere.

**General:**

Rescuers should not enter an oxygen deficient atmosphere without using self-contained full face positive pressure breathing equipment.

**FIRE FIGHTING MEASURES****Flammability:**

Extremely flammable gas.

**Fire/Explosion Hazard:**

Container may rupture when heated. If possible, stop flow of product. Move cylinders from fire if safe to do so. Cool cylinders with water from a protected location. If unable to keep cylinders cool, Evacuate Area.

**Extinguishing Media:**

Water fog or fine water spray.

**Hazchem Code:**

2 SE

**Recommended Protective Clothing:**

Breathing apparatus need only be worn if the substance is in fire.

**ACCIDENTAL RELEASE MEASURES****Personal Protection:**

Personnel engaged in the movement of cylinders shall be provided with safety footwear and leather or PVC gloves. Full cover overalls and safety glasses recommended. In areas where equipment failure may cause an immediate high concentration of methane, approved self-contained full face respiratory equipment should be readily available.

**Spills and Disposal:**

Ventilate area. Allow gas to dissipate to atmosphere. Evacuate area. Eliminate ignition sources.

**Reference Guide:**

Standard SNZ HB 76:2008 Dangerous Goods – Initial Emergency Response Guide.

**General:**

Only experienced and properly instructed personnel should handle compressed gases. Cylinder contents and identification labels provided by the supplier must not be removed or defaced. Colour coding should not be the only criterion used for content identification.

**HANDLING AND STORAGE****Handling****Flammability:**

Extremely flammable gas.

**General:**

Only experienced and properly instructed personnel should handle compressed gases. Cylinder contents and identification labels provided by the supplier must not be removed or defaced. Colour coding should not be the only criterion used for content identification.

**Approved Handlers:**

Approved handlers are required if more than 100 m<sup>3</sup> is stored on site.

**Storage****Separation:**

Storage of compressed gas cylinders shall be in compliance with New Zealand regulations. Cylinders shall be stored in a cool, dry, well ventilated area out of direct sunlight and away from heat and ignition sources. No part of cylinders shall be exposed to temperatures above 50°C. Cylinders shall be stored upright on a level, fireproof floor, secure in position and protected from damage. Full cylinders shall be stored separately from empties. Cylinders should be moved by hand-truck or cart designed for that purpose. Avoid any contact with oil or grease particularly to the cylinder valve.

**Spills and Disposal:**

Ventilate area. Allow gas to dissipate to atmosphere. Eliminate ignition sources. Evacuate area.

**EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure Standards:**

Simple asphyxiant.

**Engineering Controls:**

Provide adequate local exhaust and dilution (general) ventilation and supply sufficient replacement air to maintain oxygen concentration above 18%.

**Personal Protection:**

Personnel engaged in the movement of cylinders shall be provided with safety footwear and leather or PVC gloves. Full cover overalls and safety glasses recommended. In areas where equipment failure may cause an immediate high concentration of methane, approved self-contained full face respiratory equipment should be readily available.

**PHYSICAL AND CHEMICAL PROPERTIES****Physical Properties**

Appearance:	Colourless, sweet odour	Flashpoint:	537°C
Boiling Point:	-161.52°C	Flammability Limits (in Air):	5.0% to 15.4%
Vapour Pressure:	Not applicable	Solubility in Water (at 2°C):	0.054 m <sup>3</sup> /kg

**Other Properties**

Relative Density (at 15°C) (Air = 1):	0.548	Density of Gas (101.3 kPa, 15°C):	0.6714 kg/m <sup>3</sup>
Molecular Weight:	16.043	Critical Temperature:	-82.62°C

**STABILITY AND REACTIVITY****Flammability:**

Extremely flammable gas. Explosive; fire, blast or projection hazard.

**Materials Compatibility:**

Most lubricants are NOT compatible.

**TOXICOLOGY INFORMATION**

No known toxicological effects from this product.

**ECOLOGICAL INFORMATION**

No known ecological damage caused by this product. Global warming factor (CO<sub>2</sub>=1): 21.

**DISPOSAL CONSIDERATIONS**

Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous.

**TRANSPORT INFORMATION**

<b>UN Number:</b>	1971
<b>Proper Shipping Name:</b>	METHANE, COMPRESSED OR NATURAL GAS, COMPRESSED
<b>Dangerous Goods Class and Subsidiary Risk:</b>	2.1
<b>Packing Group:</b>	Not applicable
<b>Hazchem Code:</b>	2 SE

**Other Information:** Avoid transport on vehicles where the load is not separated from the driver's compartment.

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers:

- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure there is adequate ventilation.
- Compliance with applicable regulations.

**REGULATORY INFORMATION****ERMA Register Approval No:** HSR001005

**HSNO Controls:** Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.  
Hazardous Substances (Disposal) Regulations 2001.  
Hazardous Substances (Personnel Qualifications) Regulations 2001.  
Hazardous Substances (Emergency Management) Regulations 2001.  
Hazardous Substances (Identification) Regulations 2001.  
Hazardous Substances (Compressed Gases) Regulations 2004.  
Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004.  
Schedule 10 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.  
Schedule 12 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.

**Approved Handlers:**

Approved handlers are required if more than 100 m<sup>3</sup> is stored on site.

**OTHER INFORMATION**

Compressed Methane is supplied in high pressure cylinders.

Cylinder Colour: Silver Grey  
Cylinder Valve Outlet: Industrial: AS 2473 Type 20

References:

- . L'Air Liquide Gas Encyclopaedia - Elsevier Scientific Publishing Co. Amsterdam
- . Cheminfo Database
- . New Zealand Code for the Transport of Dangerous Goods by Road and Rail
- . NHMRC Threshold Limit Values - Commonwealth Dept Health
- . SAA Safe Storage and Handling Information Cards
- . SAA Emergency Procedure Cards
- . Matheson Gas Data Book, 6th Edition, Matheson 1980
- . Canadian Liquid Air Montreal, Canada - Gas Products Safety Data Sheets
- . AS 1894 Code of Practice for Safe Handling of Cryogenic fluids
- . NZCIC Code of Practice – Preparation of Safety Data Sheets

**END MSDS**

This MSDS summaries our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. 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 this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

This MSDS has been prepared in accordance with NZCIC Code of Practice – Preparation of Safety Data Sheets

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