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MATERIAL SAFETY DATA SHEET

Product Name:

**OXYGEN based
Compressed Gas Mixtures**

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Label 2.2 : Non flammable, non toxic gas.



Label 5.1 : Oxidizing substances.

IDENTIFICATION

Chemical Name: Oxygen, Nitrogen and Carbon Dioxide
Synonyms: Air Liquide Range of Mixtures
UN Number: 3156
Poisons Schedule Number: None allocated
EPG (Emergency Procedure Guide): AS 1678 2B1

Use: Supports combustion.

HAZARDS IDENTIFICATION

Dangerous Goods Class and Subsidiary Risk: 2.2 sub. 5.1
HSNO Classification: 5.1.2A

Hazard Statement: May cause or intensify fire: Oxidiser.

Precautionary Statements: Read label before use.
Read Material Safety Data Sheet before use.
Keep away from heat, sparks and open flames.
Keep away from combustible materials and clothing. No Smoking.
Take any precautions to avoid mixing with combustibles.
Keep reduction valves free from grease and oil.
Wear protective gloves and eye protection.
Wear fire retardant clothing.
In case of fire: Stop leak if safe to do so.
Store in a well ventilated place.

COMPOSITION

Ingredients	CAS Number	Proportion
Chemical Entity		
Oxygen	7782-44-7	23% - 98%
Nitrogen	7727-37-9	0% - 77%
Carbon dioxide	124-38-9	0% - 77%

FIRST AID MEASURES**Health Effects****Acute**

Swallowed: Not applicable to gases.

Eye: Not irritating to the eye.

Skin: Not irritating to the skin.

Inhaled: Breathing high concentrations of oxygen may cause symptoms of hyperoxia including cramps, nausea, dizziness, hypothermia, ambyopia, respiratory difficulties, bradycardia, fainting spells and convulsions capable of leading to death.

Chronic

Long term exposure to oxygen has no known health effects. Can be inhaled as a pure gas for several hours per day for periods of several days without observable harmful effects.

First AidInhalation:

Call doctor. Prompt medical attention is mandatory in all cases of overexposure to oxygen. If victim 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 is 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 being removed – In case of frostbite, thaw with lukewarm water. Obtain immediate medical assistance.

Eye Contact

Immediately flush eyes thoroughly with water for at least 15 minutes.

Advice to Doctor

Advise doctor that victim is experiencing (has experienced) hyperoxia.

General:

Rescue personnel should be aware of extreme fire hazard associated with oxygen rich atmospheres.

FIRE FIGHTING MEASURES**Flammability:**

Non-Flammable but vigorously supports combustion of many materials which will not normally burn in air. Store away from flammable products. Never smoke or carry out hot work in oxygen rich atmosphere. Never wear clothing saturated with oxygen.

Fire/Explosion Hazard:

Container may rupture when heated. 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. However this may not be appropriate for all fires as oxygen vigorously supports combustion and may be supporting the combustion of a material that is not suitable with this extinguishing media.

Hazchem Code:

2S

Recommended Protective Clothing:

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

ACCIDENTAL RELEASE MEASURES**Personal Protection:**

Personnel engaged in the movement and use of cylinders should be provided with safety footwear and leather or PVC gloves. Full cover overalls and safety glasses recommended.

Spills and Disposal:

Ventilate area. Stop leak if it can be done without risk. Allow gas to dissipate to atmosphere.

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:**

Non-Flammable but vigorously supports combustion of many materials which will not normally burn in air. Store away from flammable products. Never smoke or carry out hot work in oxygen rich atmosphere. Never wear clothing saturated with oxygen.

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 200 m³ 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. Avoid any contact with oil or grease particularly to the cylinder valve. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. 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.

Spills and Disposal:

Well ventilate area. Stop leak if it can be done without risk. Allow gas to dissipate to atmosphere.

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

Nitrogen is a simple asphyxiant.

Carbon dioxide TWA 5000 ppm v/v STEL 30,000 ppm v/v

Engineering Controls:

Ensure that ventilation of area where oxygen is being used is adequate to maintain the air-oxygen concentration from the normal 21% to 23%.

Personal Protection:

Personnel engaged in the movement and use of cylinders should be provided with safety footwear and leather or PVC gloves. Full cover overalls and safety glasses recommended.

PHYSICAL AND CHEMICAL PROPERTIES**Physical Properties**

Appearance:	Colourless, Odourless, Tasteless	Flashpoint:	Non Flammable
Boiling Point:	Not Applicable	Flammability Limits:	Non Flammable
Vapour Pressure:	Not Applicable	Solubility in Water (at 0°C):	Not Applicable

Other Properties

Relative Density (at 15°C) (Air = 1):	1.09 to 1.42	Density of Gas (101.3 kPa, 15°C):	1.34 kg/m ³ -1.74 kg/m ³
Molecular Weight:	Not Applicable	Critical Temperature:	Not Applicable

STABILITY AND REACTIVITY**Flammability:**

Non-Flammable but vigorously supports combustion of many materials which will not normally burn in air. Store away from flammable products. Never smoke or carry out hot work in oxygen rich atmosphere. Never wear clothing saturated with oxygen.

Materials Compatibility:

Equipment to handle oxygen must be constructed of suitable material. Copper, copper alloys and stainless steel are most commonly used. Most lubricants are NOT compatible.

TOXICOLOGY INFORMATION

No known toxicological effects from this product.

ECOLOGICAL INFORMATION

No ecological damage caused by this product.

DISPOSAL CONSIDERATIONS

To atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous.

TRANSPORT INFORMATION

UN Number:	3156
Proper Shipping Name:	COMPRESSED GAS, OXIDISING, N.O.S. – (CONTAINS OXYGEN AND NITROGEN)
Dangerous Goods Class and Subsidiary Risk:	2.2 sub. 5.1
Packing Group:	Not applicable
Hazchem Code:	2S
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: <ul style="list-style-type: none">• 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: HSR002534

HSNO Controls: Compressed Gas Mixtures (Oxidising [5.1.2]) Group Standard 2006
Hazardous Substances and New Organisms Act 1996

Approved Handlers:

Approved handlers are required if more than 200 m³ is stored on site.

OTHER INFORMATION

Oxygen based compressed gas mixtures are supplied in high pressure cylinders.

Cylinder Colours Industrial: Nitrogen - AS 2700 N63 Pewter
Carbon Dioxide Silver

Cylinder Valve Outlet: Industrial: AS 2473 Type 10 or AS2473 Type 30

- 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 summarises 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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