

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

MATERIAL SAFETY DATA SHEET
COMPRESSED HELIOX



SUPPLIER IDENTIFICATION DETAILS:

Supplier Name: Southern Gas Services Limited
Supplier Address: 1/26 Railway Road, Izone Southern Business Hub, Rolleston
Phone Numbers: (03) 3472691 OR (03) 3472692
Emergency Contact: (027) 2891973 OR (027) 2891972
Email Address: info@southerngas.co.nz
Website Address: www.southerngas.co.nz
MSDS Date of Issue: 1 September 2014
MSDS Date for Review: 1 September 2019

IDENTIFICATION:

Chemical Name: Compressed Gas Not Otherwise Specified (NOS)
 50% Helium/Oxygen and variations of this gas blend
Synonyms: Heliox
UN Number: 1956
Use: In Breathing Mixtures for Long Deep Diving, and Medical Applications for Breathing disorders.

HAZARDS IDENTIFICATION:

Dangerous Goods Class and Subsidiary Risk: 2.2

HSNO Classification: Not Hazardous

Hazard Statement:
 Contains gas under pressure; may explode if heated.

Precautionary Statements:

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	1

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

Read label before use.
Read Safety Data Sheet before use.
Protect from sunlight and heat.
Store in a well-ventilated place.
Wear protective gloves and eye protection.

COMPOSITION / INGREDIENTS:

Chemical Entity	CAS Number	Proportion
Helium	7440-59-7	50 – 98%
Oxygen	7782-44-7	2 – 50%

Contains no other components or impurities that will influence the classification of the product.

FIRST AID MEASURES:

Health Effects

Acute

Swallowed: Not applicable to gases.
Eye: Not irritating to the eye.
Skin: Not irritating to the skin.
Inhaled: Helium/Oxygen gas mixture is non-toxic. 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 helium 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

Inhalation:

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	2

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

In high concentrations may cause asphyxiation.
Symptoms may include loss of mobility/consciousness.
Remove victim to uncontaminated area wearing self-contained breathing apparatus.
Keep victim warm and rested.
Call a doctor.
Apply artificial respiration if breathing stopped.

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 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:

Non Flammable.

Fire/Explosion Hazard:

Non-flammable, however exposure to fire may cause container to rupture/explode. Cylinders involved in a fire/explosion may rocket. Move cylinders from vicinity of fire if safe to do so.

For mixtures greater than 21% oxygen 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.

Cool cylinders by spraying flooding quantities of water from a protected location. If unable to keep cylinders cool, evacuate area, minimum distance 200 meters.

Extinguishing Media:

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	3

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

Use appropriate media to extinguish source of surrounding fire. (Fog or a fine water spray is recommended) Cool cylinders with water if possible.

Hazchem Code: 2 S [E]

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 helium, approved self-contained full face respiratory equipment should be readily available.

Spills and Disposal:

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

Reference Guide:

Standard SNZ HB 76:2008 Dangerous Goods – Initial Emergency Response Guide.
AS/NZS 1337 – Eye Protection for Industrial Applications
AS/NZS 2161.1 – Occupational Protective Gloves – Selection, use and maintenance
AS/NZS 1715 – Selection, Use and Maintenance of Respiratory Protective Devices
AS/NZS 1716 – Respiratory Protective Devices

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.

For mixtures greater than 21% oxygen 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.

General:

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	4

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

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 not required, non-hazardous gas (HSNO).

Storage:

Storage of compressed gas cylinders shall be in compliance with New Zealand HSNO Regulations.

Cylinders will be kept away from ignition sources (including static discharges).

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, secured 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.

Separation:

Avoid any contact with oil or grease particularly to the cylinder valve.

Air can be stored with most common substances.

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 helium, approved self-contained full face respiratory equipment should be readily available.

Reference Guide:

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	5

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

AS/NZS 1337 – Eye Protection for Industrial Applications
 AS/NZS 2161.1 – Occupational Protective Gloves – Selection, use and maintenance
 AS/NZS 1715 – Selection, Use and Maintenance of Respiratory Protective Devices
 AS/NZS 1716 – Respiratory Protective Devices

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: (Air = 1): 0.14 – 0.62
 Density of Gas: (101.3 kPa, 15°C): 0.17 – 0.76
 Molecular Weight: Not Applicable
 Critical Temperature: Not Applicable

STABILITY AND REACTIVITY:

Flammability:

Heliox is non- flammable but supports combustion of common combustible materials. For mixtures greater than 21% oxygen 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.

Materials Compatibility: Not applicable.

TOXICOLOGY INFORMATION:

No known toxicological effects from this product.

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	6

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

ECOLOGICAL INFORMATION:

No known ecological damage caused by this product.

DISPOSAL CONSIDERATIONS:

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

TRANSPORT INFORMATION:

UN Number: 1956

Proper Shipping Name: COMPRESSED GAS, NOT OTHERWISE SPECIFIED (NOS)

Dangerous Goods Class and Subsidiary Risk: 2.2

Packing Group: Not applicable

Hazchem Code: 2 S [E]

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:

Environmental Protection Agency Register Approval No: HSR002533

HSNO Controls:

Compressed Gas Mixtures (Non-hazardous) Group Standard 2006

Hazardous Substances (Compressed Gases) Regulations 2004.

Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004.

Approved Handlers: Approved handlers are not required, non-hazardous gas (HSNO).

OTHER INFORMATION:

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	7

MATERIAL SAFETY DATA SHEET

Title: **COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET**

Heliox is supplied in high pressure cylinders.

Note, In the Diving Industry, cylinders are often painted yellow or white for visibility, however several of these can be painted different colours (Blue, Silver) A diving cylinder will easily be identified due to its diving valve configuration.

Cylinder Colour:

Industrial: AS2700 – Brown Body (X54)

Diving: AS2700 – Brown Body (X54) with White (N14) Shoulders

Medical: AS2700 – White Body (N14) with Brown (X54) and White (N14) Quadrants on shoulders

Cylinder Valve Outlet:

Industrial: AS 2473.2 Type 10

Diving: K or DIN Valve.

Medical: AS 2473.3 2007 4.6 pin Index (Figure 115)

References:

NZS 5433:2007 Transport of Dangerous Goods on Land

EPA Website – Approvals Register – www.epa.govt.nz

SNZ HB76:2008 Dangerous Goods – Initial Emergency Response Guide

AS1678 2C1 Emergency Procedure Guide – Transport – Non-Flammable, Compressed Gas

AS 4484-2004 - Gas Cylinders for Industrial, Scientific, medical and refrigerant use -

Labelling and colour coding

AS 2473.2-2007 - Valves for compressed gas outlets - Part 2 Outlet connections (threaded) and stem (inlet) threads

AS 2473.3-2007 - Valves for compressed gas outlets - Part 3 Outlet connections for medical gases (including pin-indexed yoke connections)

Operators Handbook for the Transport of Dangerous Goods by Road – NZ Road Transport & Logistics Industry Training Organisation

NZCIC Code of Practice – Preparation of Safety Data Sheets

MSDS SUMMARY:

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

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	8



MATERIAL SAFETY DATA SHEET
Title: COMPRESSED HELIOX MATERIAL SAFETY DATA SHEET

clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Southern Gas Services Limited.

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.

Prepared By:	MAM	Document Number:	MSDS 008	Number of Copies	1
Authorised By:	WJM	Issue Date:	01/09/2014	File Location:	MASTER FILE
Reason for Amendment:	AMENDMENT	Revision Number:	REV 002	Page Number:	9