BOC
A Member of The Linde Group

SAFETY DATA SHEET

 # 0299

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **HELIOX 28 (NZ)**

Synonyms 0299 - SDS NUMBER ● 28% V/V OXYGEN, BALANCE HELIUM ● BOC HELIOX 28 ● HELIOX 28

1.2 Uses and uses advised against

Uses HYPOXIA TREATMENT ● MEDICAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name **BOC LIMITED (NEW ZEALAND)**

Address 988 Great South Road, Penrose, Auckland, NEW ZEALAND

Telephone +64 9 525 5600

Email customer.servicenz@boc.com

Website http://www.boc.co.nz

1.4 Emergency telephone numbers

Emergency 0800 111 333 (NZ only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

Physical Hazards

Gases Under Pressure: Compressed gas
Oxidizing Gases: Category 1

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H270 May cause or intensify fire; oxidizer.
H280 Contains gas under pressure; may explode if heated.

Prevention statements

P220 Keep away from clothing and other combustible materials.
P244 Keep valves and fittings free from oil and grease.

Response statements

P370 + P376 In case of fire: Stop leak if safe to do so.

Storage statements

P403 Store in a well-ventilated place.

Disposal statements

None allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (v/v)
HELIUM	7440-59-7	231-168-5	72%
OXYGEN	7782-44-7	231-956-9	28%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye None required.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin None required.

Ingestion Due to product form and application, ingestion is considered unlikely.

First aid facilities Eye wash facilities and safety shower are recommended.

4.2 Most important symptoms and effects, both acute and delayed

No adverse health effects expected if the product is handled in accordance with the SDS and the product label.

4.3 Immediate medical attention and special treatment needed

Treatment for hyperoxia.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable - oxidising agent. May increase fire intensity. Do not expose to heat and ignition sources. May ignite in contact with incompatible materials. Will not evolve any hazardous decomposition products.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. Remove cool cylinders from the path of the fire if safe to do so. Ensure working area is well ventilated before re-use. Notify the manufacturer that you will be returning a faulty cylinder. Residual product will be disposed of when the cylinder is returned.

5.4 Hazchem code

2S

2 Fine Water Spray.

S Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up
Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Use of safe work practices are recommended to avoid inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

7.2 Conditions for safe storage, including any incompatibilities
Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 65°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Helium	WES [NZ]	Asphyxiant			

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls No special precautions are normally required when handling this product.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather gloves.
Body	Wear safety boots.
Respiratory	Not required under normal conditions of use.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	-268.9°C (Helium)
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	0.138 - 1.105 (Air = 1)
Relative density	NOT APPLICABLE
Solubility (water)	0.0094 - 0.0489 L/L

9.1 Information on basic physical and chemical properties

Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	OXIDISING GAS
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
Critical pressure	227 - 5,043 kPa
Critical temperature	-118.6°C to -267.9°C
Cylinder pressure (when full)	16,300 to 25,000 kPa @ 15°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Combustible materials such as oil and grease can spontaneously ignite at low temperatures in oxygen enriched atmospheres. Materials which burn in air, will burn more vigorously in oxygen enriched atmospheres.

10.6 Hazardous decomposition products

This material will not decompose to form hazardous products other than that already present.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant.
Eye	Not classified as an eye irritant.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
No information provided.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
Not toxic to aquatic or terrestrial life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
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

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA





	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	3156	3156	3156
14.2 Proper Shipping Name	COMPRESSED GAS, OXIDIZING, N.O.S. (contains oxygen)	COMPRESSED GAS, OXIDIZING, N.O.S. (contains oxygen)	COMPRESSED GAS, OXIDIZING, N.O.S. (contains oxygen)
14.3 Transport hazard classes	2.2 (5.1)	2.2 (5.1)	2.2 (5.1)
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards
No information provided.

14.6 Special precautions for user
Hazchem code 2S

EmS F-C, S-W

Other information Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. Refer to Local Dangerous Goods Legislation which contain requirements which affect gas storage and transport. Keep locked up and out of reach of children.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Approval code HSR002534 (2020)

Group standard Gases under Pressure Mixtures (Oxidising Gases) Group Standard 2020

Inventory listings **NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals)**
All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information

APPLICATION METHOD: From combined valve/regulator and flowmeter on cylinder to non-rebreathing mask and tube fitted to barbed tail outlet or via ventilator connected to Diameter Indexed outlet.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, 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: form of product; 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.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts 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 SDS.

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