MATERIAL SAFETY DATA SHEET (MSDS)
HELIUM
Please ensure that this MSDS is received by an appropriate person

DATE: March 2023 Version 2
Ref. No.: MS055

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name	Helium Chemical
Chemical Formula	He
Trade Names	Helium, Technical (N2.7) Helium, High Purity (N4.5) Helium, Instrument, Grade (N4.5) Helium, UHP (5.0) Helium, Research (N6.0)
Colour Coding	Mid Brown
Valves	5/8 inch BSP right hand
Company Identification	Les Gaz Industriels Ltd Pailles Road G.R.N.W. Republic of Mauritius Tel No: (+230) 212-8306 Fax No: (+230) 212-0235
EMERGENCY NUMBER	**(+230) 800 1133**

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Helium
Chemical Family	Inert Rare Gas
CAS No.	7440-59-7
UN No.	1046
ERG No.	121
Hazard Warning	2 C Non-flammable gas

3 HAZARDS IDENTIFICATION

Main Hazards
All cylinders are portable gas containers and must be regarded as pressure vessels at all times. Helium does not support life. It can act as a simple asphyxiant by diluting the concentration of oxygen in air below the levels necessary to support life.

Adverse Health Effects.
Helium is non-toxic and inert. Inhalation in excessive concentrations can result in dizziness, nausea, vomiting, loss of consciousness, and death. Death may result from errors in judgement, confusion or loss of consciousness which prevents self- rescue. At low oxygen concentrations, unconsciousness and death may occur in seconds without warning.

Chemical Hazards
Helium is extremely inert and forms no known chemical compounds.

Biological Hazards
Helium is extremely light and disperses very rapidly into the atmosphere. No known hazard.

Vapour Inhalation.
As Helium acts as a simple asphyxiant death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations, unconsciousness and death may occur in seconds without warning.

Eye Contact No known effects.
Skin Contact No known effects.
Ingestion (See "Vapour Inhalation" above).

Label Elements
Hazard Pictograms

Precautionary Statements
H280: Contains gas under pressure, may explode if heated.
P403: Store in a well-ventilated place
P280: Wear protective gloves/eye protection/face protection.

4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to Helium. Rescue personnel should be equipped with self-contained breathing apparatus. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be removed to an uncontaminated area, and given mouth-to-mouth resuscitation and supplemental oxygen.

Eye/Skin Contact	No known effect.
Ingestion	(See section Above.)
Inhalation	Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Seek medical attention. Apply artificial respiration if breathing stopped. Low concentrations of Helium will not cause irritation.

5 FIRE FIGHTING MEASURES

Extinguishing media
As Helium disperses rapidly into the atmosphere, it would have little effect on the fire. The appropriate extinguishant should be used for the type of combustible material involved.

Specific Hazard
Helium does not support life. It can act as a simple asphyxiant by diluting the concentration of oxygen in the air below the levels to support life.

Emergency Actions
If possible, shut off the source of excess helium. Evacuate area. All cylinders should be removed from the vicinity of the fire. Cylinders that cannot be removed should be cooled with water from a safe distance. CONTACT Les Gaz Industriels Ltd.

Protective Clothing
Self-contained breathing apparatus. Safety gloves and shoes, or boots, should be worn when handling cylinders.

Environmental precautions
As the gas is lighter than air, ensure that it is not trapped in confined spaces, otherwise this could lead to the formation of an oxygen-deficient atmosphere. Ventilate all confined spaces using forced draught if necessary.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions
Do not enter any area where Helium has been spilled unless tests have shown that it is safe to do so.

Environmental Precautions
Helium does not pose a hazard to the environment.

Small Spills
Shut off the source of escaping Helium. Ventilate the area.

Large Spills
Evacuate the area. Shut off the source of the spill if this can be done without risk. Restrict access to the area until completion of the clean-up procedure. Ventilate the area using force-draught if necessary.

7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Argon cylinders may be stacked horizontally provided that they are firmly secured at each end to prevent rolling. Use a "first in - first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Keep out of reach of children.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Hazards
As Helium is a simple asphyxiant, avoid any areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe.

Engineering Control Measures
Engineering control measures are preferred to reduce leakage of helium into atmospheres.

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Personal Protection
Self-contained breathing apparatus should always be worn when entering area where oxygen depletion may have occurred. Safety goggles, gloves and shoes or boots should be worn when handling cylinders.
Skin
No known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES
PHYSICAL DATA

Chemical Symbol	He
Molecular Weight	4,0026
Specific Volume @ 20°C & 101,325 kPa	6030,4 ml/g
Relative density (Air = 1) @ 101,325 kPa	0,137
Colour	None
Taste	None
Odour	None

10 STABILITY AND REACTIVITY
Conditions to avoid
The dilution of the oxygen concentration in the atmosphere to levels. which cannot support life. Never use cylinders as rollers or supports, or for any other purpose than the storing of Helium. Never expose cylinders to excessive heat, as this may cause sufficient build-up of pressure to rupture the cylinders.
Incompatible Materials
As Helium is inert, it may be contained in systems constructed of any of the common metals which have been designed to safely withstand the pressures involved.
Hazardous Decomposition Products
None

11 TOXICOLOGICAL INFORMATION

Acute Toxicity	No known effect
Skin & eye contact	No known effect
Chronic Toxicity	No known effect
Carcinogenicity	No known effect
Mutagenicity	No known effect
Reproductive Hazards	No known effect

(For further information see Section 3. Adverse Health effects)

12 ECOLOGICAL INFORMATION
Helium does not pose a hazard to the ecology.

13 DISPOSAL CONSIDERATIONS
Disposal Methods
Small amounts may be blown to the atmosphere under controlled conditions. Large amounts should only be handled by gas supplier.
Disposal of Packaging
The disposal of cylinders must only be handled by the gas supplier.

14 TRANSPORT INFORMATION
ROAD TRANSPORTATION

UN No	1046
Class	2.2
Danger Group	Non- flammable, non-toxic gases
Subsidiary Risk	Asphyxiant
ERG No	121
Hazchem warning	2C Non-flammable gas

SEA TRANSPORTATION

IMDG	1046
Class	2.2
Label	Non-Flammable Gas

AIR TRANSPORTATION

ICAO/IATA Code	1046
Class	2.2
Danger Group	Non-Flammable Gas
Packaging instructions	
- Cargo	200
- Passenger	200
Maximum quantity allowed	
- Cargo	150kg
- Passenger	75kg

15 REGULATORY INFORMATION
EEC Hazard class Non-flammable

Risk Phrase	Description	Safety Phrase	Description
R44	Risk of explosion if heated under confinement	S2	Keep out of reach of Children
		S9	Keep container in a well-Ventilated place
		S15	Keep way from heat
		S37	Wear suitable gloves
		S39	Wear eye/face protection

National legislation None
Refer to SABS 0265 for explanation of the above.

16 OTHER INFORMATION
Bibliography
Compressed Gas Association, Arlington, Virginia
Handbook of Compressed Gases – 3rd Edition Matheson
Matheson Gas Data Book – 6th Edition
SABS 0265 - Labelling of Dangerous Substances

17 EXCLUSION OF LIABILITY
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