MATERIAL SAFETY DATA SHEET (MSDS)
HELIUM

(Please ensure that this MSDS is received by an appropriate person)

Date: June 2014 Version 2

Ref. no.:MS055

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name	Helium
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 (B.07) body with the appropriate grade decal affixed centrally to the body of the cylinder (N.B. Research grade Helium does not have a decal on the cylinder)
Valves	All grades have the Neriki - Brass 5/8 inch BSP right hand, positive pressure valves fitted.
Company Identification	Afrox Malawi Limited Johnstone Road Ginnery Corner, Blantyre Tel No: +265(1)871 61 1 Fax No: +265(1)871 260
EMERGENCY No.	+265 (1) 871 611 **(24hrs)**

2 COMPOSITION/INFORMATION ON INGREDIENTS

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

3 HAZARDS IDENTIFICATION

Main Hazards. 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).

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 Contact	No known effect.
Skin Contact	No known effect.
Ingestion	(See section above).

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 Hazards	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 THE NEAREST AFROX BRANCH.
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	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.

7 HANDLING AND STORAGE

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Do not allow cylinders to slide or come into contact with sharp edges. Helium 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 the leakage of Helium into the atmosphere.
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	4,003
Density of Gas 1 atm and 21.1°C	0.166kg/m^3
Relative density (Air = 1) @ 101,325 kPa	0,138
Colour	None
Taste	None
Odour	None

10 STABILITY AND REACTIVITY

Conditions to avoid Never use cylinders as rollers or supports, or for any other purpose than the storage of Helium. Never expose the cylinder 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).

15 ECOLOGICAL INFORMATION

Helium does not pose a hazard to the ecology.

16 DISPOSAL CONSIDERATIONS

Disposal Methods Small amounts may be blown to the atmosphere under controlled conditions. Large amounts should only be handled by the gas supplier.

Disposal of packaging The disposal of cylinders must only be handled by the gas supplier.

TRANSPORT INFORMATION

17
ROAD TRANSPORTATION

UN No.	1046
ERG No.	121
Hazchem warning	2C Non-flammable gas
SEA TRANSPORTATION	
IMDG	1046
Class	
Packaging group Label	Non-flammable gas
AIR TRANSPORTATION	
ICAO/IATA Code Class	1046
Packaging group Packaging instructions	2.2
- Cargo	200
- Passenger Maximum quantity allowed	200
- Cargo	150Kg
- Passenger	75

REGULATORY INFORMATION

EEC Hazard class	Non-flammable
Risk phrases	R20 Harmful by inhalation R44 Risk of explosion if heated under confinement
Safety phrases	S2 Keep out of reach of children S15 Keep away from heat S37 Wear suitable gloves S39 Wear eye/face protection S51 Use only in well ventilated areas

Refer to SANS 10234 for explanation of the above.

OTHER INFORMATION

Bibliography
. Matheson Gas Data Book - 7th Edition

17 EXCLUSION OF LIABILITY

Whilst AFROX made best endeavour to ensure that the information contained in this publication is accurate at the date of publication, AFROX does not accept liability for an inaccuracy or liability arising from the use of this information, or the use, application, adaptation or process of any products described herein

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