HELIUM
Safety Data Sheet

1. IDENTIFICATION

Product identifier
Product Name HELIUM

Other means of identification
Safety data sheet number LIND-P060
UN/ID no. UN1046
Trade name Lasline He 4.7; Lasline He 5.0, Grade 4.7, Grade 5.0, Grade 5.3, Grade 6.0, Diving Grade

Recommended use of the chemical and restrictions on use
Recommended Use Industrial and professional use. Calibration/test gas.
Uses advised against Consumer use

Details of the supplier of the safety data sheet
Messer North America, Inc. - Messer LLC - Messer Merchant Production LLC
200 Somerset Corporate Blvd, Suite 7000
Bridgewater, NJ 08807
Phone: 908-464-8100
www.messer-us.com

Messer Gas Puerto Rico, Inc.
Road 869, Km 1.8
Barrio Palmas, Catano, PR 00962
Phone: 787-641-7445

* May include subsidiaries or affiliate companies/divisions.

For additional product information contact your local customer service.

Emergency telephone number
Company Phone Number +1 800-232-4726 (Messer National Operations Center, US)

CHEMTREC: 1-800-424-9300 (North America) +1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Gases under pressure	Compressed gas
Simple asphyxiants	Yes

Label elements

Signal word **Warning**

Hazard Statements
Contains gas under pressure; may explode if heated
May displace oxygen and cause rapid suffocation

Precautionary Statements - Prevention
Do not handle until all safety precautions have been read and understood
Use and store only outdoors or in a well ventilated place
Use a backflow preventive device in piping
Use only with equipment rated for cylinder pressure
Close valve after each use and when empty

Precautionary Statements - Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical attention/advice.

Precautionary Statements - Storage
Protect from sunlight when ambient temperature exceeds 52°C/125°F

Hazards not otherwise classified (HNOC)
Not applicable

Intentional inhalation of helium balloon gas can cause asphyxiation, lung damage, and death.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure Gas

Chemical Name	CAS No.	Volume %	Chemical Formula
HELIUM	7440-59-7	>99	He

4. FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Skin contact None under normal use. Get medical attention if symptoms occur.

Eye contact None under normal use. Get medical attention if symptoms occur.

Ingestion Not an expected route of exposure.

Self-protection of the first aider RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Most important symptoms and effects, both acute and delayed

Symptoms Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media None.

Specific extinguishing methods
Continue to cool fire exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.

Specific hazards arising from the chemical
Non-flammable gas. Cylinders may rupture under extreme heat.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Monitor oxygen level. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

Environmental precautions

Environmental precautions Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Messer location.

Methods for cleaning up Return cylinder to Messer or an authorized distributor.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Proper handling, storage of regulating equipment and cylinders is required to safely fill helium balloons. DO NOT ALLOW CHILDREN OR UNQUALIFIED PEOPLE TO OPERATE BALLOON FILLING EQUIPMENT. INTENTIONAL INHALATION OF HELIUM CAN CAUSE SERIOUS LUNG DAMAGE OR DEATH. A balloon filling helium regulator must be attached to the valve before it is opened.

Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Never attempt to lift a cylinder by its valve protection cap. Never insert an object (e.g. wrench, screwdriver, pry bar,etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Use only with adequate ventilation. Use a backflow preventive device in piping. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Ensure the complete gas system has been checked for leaks before use.

Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.

Only experienced and properly instructed persons should handle gases under pressure. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, publication CGA-P1, Safe Handling of Compressed Gases in Containers.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Full and empty cylinders should be segregrated. Stored containers should be periodically checked for general condition and leakage.

Incompatible materials None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
HELIUM 7440-59-7	: See Appendix F: Minimal Oxygen Content	None	None

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls Provide general ventilation, local exhaust ventilation, process enclosure or other engineering controls to maintain airborne levels below recommended exposure limits and to maintain oxygen levels above 19.5%. Oxygen detectors should be used when asphyxiating

gases may be released. Systems under pressure should be regularly checked for leakages.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Work gloves and safety shoes are recommended when handling cylinders.

Respiratory protection Use positive pressure airline respirator with escape cylinder or self contained breathing apparatus for oxygen-deficient atmospheres (<19.5%).

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Gas
Appearance	Colorless
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Melting/freezing point	Not applicable
Boiling point / boiling range	-268.9 °C / -452.1 °F
Evaporation rate	Not applicable
Flammability (solid, gas)	Non-flammable gas
Lower flammability limit:	Not applicable
Upper flammability limit:	Not applicable
Flash point	Not applicable
Autoignition temperature	No data available
Decomposition temperature	No data available
Water solubility	Slightly soluble
Partition coefficient	No data available
Kinematic viscosity	Not applicable

Component Level Information:

Chemical Name	Molecular weight	Boiling point/range	Vapor Pressure	Vapor density (air =1)	Gas Density kg/m³@20°C	Critical Temperature
HELIUM	4.00	-268.9 °C	Above critical temperature	0.138	0.165	-267.9 °C

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions

Chemical stability
Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
None under recommended storage and handling conditions (see Section 7).

Incompatible materials
None known.

Hazardous Decomposition Products
None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Product is a simple asphyxiant.
Skin contact	No data available
Eye contact	No data available
Ingestion	Not an expected route of exposure.

Information on toxicological effects

Symptoms	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<=19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Not classified.
Sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens listed by OSHA, IARC or NTP.
Reproductive toxicity	Not classified.
Developmental Toxicity	Not classified.
STOT - single exposure	Not classified.
STOT - repeated exposure	Not classified.
Chronic toxicity	None known.
Aspiration hazard	Not applicable.

Numerical measures of toxicity

Product Information	
Oral LD50	No information available
Dermal LD50	No information available
Inhalation LC50	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity
No known acute aquatic toxicity.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Messer for proper disposal.

14. TRANSPORT INFORMATION

DOT

UN/ID no.	UN1046
Proper shipping name	Helium, compressed
Hazard Class	2.2
Description	UN1046, Helium, compressed, 2.2
Emergency Response Guide Number	121

TDG

UN/ID no.	UN1046
Proper shipping name	Helium, compressed
Hazard Class	2.2
Description	UN1046, Helium, compressed, 2.2

IATA

UN/ID no.	UN1046
Proper shipping name	Helium, compressed
Hazard Class	2.2
ERG Code	2L
Special Provisions	A69
Description	UN1046, Helium, compressed, 2.2

IMDG

UN/ID no.	UN1046
Proper shipping name	Helium, compressed
Hazard Class	2.2
EmS-No.	F-C, S-V
Description	UN1046, Helium, compressed, 2.2

15. REGULATORY INFORMATION

INTERNATIONAL INVENTORIES

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

US FEDERAL REGULATIONS

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Risk and Process Safety Management Programs
This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68. This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

US STATE REGULATIONS

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Helium 7440-59-7	X	X	X

16. OTHER INFORMATION

NFPA **Health hazards** 0 **Flammability** 0 **Instability** 0 **Physical and Chemical Properties** Simple asphyxiant

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2019, CGA Recommended Hazard Ratings for Compressed Gases, 4th Edition.

Issue Date	17-Feb-2015
Revision Date	12-Mar-2021
Revision Note	SDS sections updated; 9

LIND-P060

General Disclaimer

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between Messer LLC, Messer Merchant Production LLC, Messer North America, Inc., Messer Gas Puerto Rico, Inc. or Messer Canada Inc. (or any of their affiliates and subsidiaries) and the purchaser.

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End of Safety Data Sheet