Helium (Compressed)

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 02/21/2017 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form : Substance

Substance name : Helium (Compressed)

CAS No : 7440-59-7

Product code : CA-1001-06711

Formula : He

Synonyms : Helium, compressed / Helium gas

1.2. Recommended use and restrictions on use

Recommended uses and restrictions : Test/Calibration gas

1.3. Supplier

Air Liquide Canada Inc.
1250, René Lévesque West Blvd. Suite 1700
H3B 5E6 Montreal, QC - Canada
T 1-800-817-7697
www.airliquide.ca

1.4. Emergency telephone number

Emergency number : 514-878-1667

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS-CA)

Gases under pressure : Compressed gas H280

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :

GHS04

Signal word (GHS-CA) : Warning

Hazard statements (GHS-CA) : H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-CA) : P410+P403 - Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification (GHS-CA)
Helium (Compressed) (Main constituent)	(CAS No) 7440-59-7	> 99	Compressed gas, H280

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Adverse effects not expected from this product.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : Do not use water jet to extinguish.

5.3. Specific hazards arising from the hazardous product

Fire hazard : The product is not flammable.

Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions, Protective Equipment and Emergency Procedures : EVACUATE ALL PERSONNEL FROM AFFECTED AREA. Use appropriate protective equipment. If leak is on user's equipment, be certain to purge piping before attempting repairs. If leak is on a container or container valve contact the closest Air Liquide Canada location.

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up : Comply with local regulations for disposal.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.

Hygiene measures : Do not eat, drink or smoke when using this product.

Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Do not expose to temperatures exceeding 52 °C/ 125 °F. Keep container closed when not in use. Protect cylinders from physical damage; do not drag, roll, slide or drop. Store in well ventilated area.

Incompatible products : None known.

Incompatible materials : None known.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure exposure is below occupational exposure limits (where available). Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Gloves. Safety glasses. Protective clothing. Safety shoes.

Hand protection : Wear working gloves when handling gas containers.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : Wear suitable protective clothing, e.g. lab coats, coveralls or flame resistant clothing.

Respiratory protection : None necessary during routine operations. See Sections 5 & 6.

Thermal hazard protection : None necessary during routine operations.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Wear safety shoes while handling containers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	Clear, colorless gas.
Molecular mass	:	4.0026 g/mol
Colour	:	Colourless.
Odour	:	Odourless.
Odour threshold	:	No data available
pH	:	No data available
pH solution	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	-272 °C
Freezing point	:	No data available
Boiling point	:	-268.94 °C
Flash point	:	Not applicable (non-flammable gas)
Critical temperature	:	-266.96 °C
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	See Section 2.1 and 2.2
Vapour pressure	:	No data available
Vapour pressure at 50 °C	:	No data available
Critical pressure	:	230 kPa
Relative vapour density at 20 °C	:	0.138
Relative density	:	No data available
Relative density of saturated gas/air mixture	:	No data available
Density	:	No data available
Relative gas density	:	0.14
Solubility	:	Water: 1.5 mg/l
Log Pow	:	Not applicable for inorganic gases.
Log Kow	:	No data available
Viscosity, kinematic	:	Not applicable.
Viscosity, dynamic	:	Not applicable.
Viscosity, kinematic (calculated value) (40 °C)	:	No data available
Explosive properties	:	Not applicable (non-flammable gas).

Oxidising properties	:	None.
Explosive limits	:	Not applicable (non-flammable gas)
Lower explosive limit (LEL)	:	No data available
Upper explosive limit (UEL)	:	No data available

9.2. Other information

Gas group	:	Compressed gas

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	:	None known.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None known.
Conditions to avoid	:	None under recommended storage and handling conditions (see section 7).
Incompatible materials	:	None known.
Hazardous decomposition products	:	Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Inhalation:gas: Not classified.

Helium (Compressed) (\f)7440-59-7	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE CA (gases)	820000.00000000 ppmv/4h

Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	No ecological damage caused by this product.

12.2. Persistence and degradability

Helium (Compressed) (7440-59-7)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

Helium (Compressed) (7440-59-7)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Helium (Compressed) (7440-59-7)	
Log Pow	Not applicable for inorganic gases.
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.

Waste disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

UN-No. (TDG) : UN1046

TDG Primary Hazard Classes : 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas.

Transport Document Description : UN1046 HELIUM, COMPRESSED, 2.2

Proper Shipping Name : HELIUM, COMPRESSED

Hazard labels (TDG) : 2.2 - Non-flammable, non-toxic gases

TDG Special Provisions : 148 - (1) Part 5 (Means of Containment) does not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles if (a)the working pressure in each receptacle is less than 5 000 KPa; (b)the capacity of each receptacle is less than 12 L; (c)each receptacle has a minimum burst pressure of (i)at least 3 times the working pressure, when the receptacle is fitted with a relief device, or (ii)at least 4 times the working pressure, when the receptacle is not fitted with a relief device; (d)each receptacle is manufactured from material that will not fragment upon rupture; (e)each detector is manufactured under a quality assurance program; ISO 9001:2008 is an example of a quality assurance program. (f)the detectors are transported in strong outer means of containment; and (g)a detector in its outer means of containment is capable of withstanding a 1.2 m drop test without breakage of the detector or rupture of the outer means of containment. (2)Part 5 (Means of Containment) does not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles and that are included in equipment, if (a)the conditions set out in paragraphs (1)(a) to (e) are met; and (b)the equipment is contained in a strong outer means of containment or the equipment affords the detectors with protection that is equivalent to that provided by a strong outer means of containment. (3)These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles, including detectors in radiation detection systems, if the detectors meet the requirements of subsection (1) or (2), as applicable, and the capacity of the receptacles that contain the detectors is less than 50 mL. SOR/2014-306

Explosive Limit and Limited Quantity Index : 0.125 L

Excepted quantities (TDG) : E1

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 75 L

14.2. Transport information/DOT - USA

Department of Transport

DOT NA no. : UN1046

UN-No.(DOT) : 1046

Transport Document Description : UN1046 Helium, compressed, 2.2

Proper Shipping Name (DOT) : Helium, compressed

Contains Statement Field Selection (DOT) : DOT_TECHNICAL - Proper Shipping Name - Technical (DOT)

Class (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

Division (DOT) : 2.2

Hazard labels (DOT)	:	2.2 - Non-flammable gas

Dangerous for the environment	:	No
DOT Packaging Exceptions (49 CFR 173.xxx)	:	306;307
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	302
DOT Packaging Bulk (49 CFR 173.xxx)	:	302;314
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	150 kg
DOT Vessel Stowage Location	:	A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel
Emergency Response Guide (ERG) Number	:	120 (UN1963);121 (UN1046)
Special transport precautions	:	Avoid transport on vehicles where the load space 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 there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.
Other information	:	No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG)	:	1046
Proper Shipping Name (IMDG)	:	Helium, Compressed
Class (IMDG)	:	2 - Gases
MFAG-No	:	121
Ship Safety Act	:	Gases under pressure/Gases nonflammable nontoxic under pressure(Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)
Port Regulation Law	:	Hazardous materials/High pressure gas (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods)

IATA

UN-No. (IATA)	:	1046
Proper Shipping Name (IATA)	:	Helium, Compressed
Class (IATA)	:	2
Civil Aeronautics Law	:	Gases under pressure/Gases nonflammable nontoxic under pressure(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

SECTION 15: Regulatory information

15.1. National regulations

Helium (Compressed) (7440-59-7)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Helium (Compressed) (7440-59-7)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)

SECTION 16: Other information

Date of issue : 21/02/2017

Full text of H-statements:

H280	Contains gas under pressure; may explode if heated

SDS Canada (GHS)

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