

SECTION 1: Identification

1.1. Product identifier

Product form	: Substance
Trade name	: hydrogen
CAS-No.	: 1333-74-0
Product code	: CA-1001-01129
Formula	: H ₂
Product group	: Specialty Gases

1.2. Recommended use and restrictions on use

Recommended uses and restrictions	: Test/Calibration gas/ carrier gas
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1.3. Supplier

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

1.4. Emergency telephone number

Emergency number	: 514-878-1667
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SECTION 2: Hazard identification

2.1. Classification of the substance or mixture


Classification (GHS CA)

Flammable gases, Category 1	H220	Extremely flammable gas.
Gases under pressure : Compressed gas: Simple asphyxiant	H280	Contains gas under pressure; may explode if heated.
	H380	Simple Asphyxiant

Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labeling

Hazard pictograms (GHS CA)	:	 
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Signal word (GHS CA)	: Danger
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Hazard statements (GHS CA)	: H280 - Contains gas under pressure; may explode if heated. H220 - Extremely flammable gas.
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Precautionary statements (GHS CA)	: P381 - In case of leakage, eliminate all ignition sources. P377 - Leaking gas fire: Do not extinguish unless leak can be stopped safely P403 - Store in a well-ventilated place. P410+P403 - Protect from sunlight. Store in a well-ventilated place.
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Hydrogen (Compressed)

Safety Data Sheet

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

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

2.3. Other hazards

Other hazards which do not result in classification : Asphyxiant in high concentrations. These high concentrations are within the flammability range. The substance/mixture has no endocrine disrupting properties.

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Hydrogen (Compressed)
CAS-No. : 1333-74-0
EC-No. : 215-605-7
EC Index-No. : 001-001-00-9

Name	Chemical name/Synonyms	Product identifier	Conc. (% v/v)	Classification (GHS CA)
Hydrogen	-Dihydrogene, Hydrogen compressed	CAS-No.: 1333-74-0	100	Flam. Gas 1, H220 Press. Gas (Comp.), H280

Full text of hazard classes and 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 person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.

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

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

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

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

Symptoms/effects upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

Most important symptoms and effects, both acute and delayed : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Refer to section 11.

Hydrogen (Compressed)

Safety Data Sheet

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

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. Water spray or fog. Dry powder.

5.2. Unsuitable extinguishing media

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

5.3. Specific hazards arising from the hazardous product

Fire hazard : This product is flammable.
Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form flammable/explosive vapour-air mixture.
Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.
Hazardous combustion products : None.

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. Exposure to fire may cause containers to rupture/explode.
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.
Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire. Move containers away from the fire area if this can be done without risk.
Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus. Standard protective clothing and equipment (e.g. Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Try to stop release. Evacuate area. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Eliminate ignition sources. Ensure adequate air ventilation. Ensure adequate ventilation. Act in accordance with local emergency plan. Stay upwind.

Personal Precautions, Protective Equipment and Emergency Procedures : **Personal protective equipment:**

Hydrogen (Compressed)

Safety Data Sheet

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

Gloves. Safety glasses. Protective clothing. Safety shoes. A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.

6.2. Methods and materials for containment and cleaning up

For containment : Try to stop release if without risk.
Methods for cleaning up : Dispose of contents/container in accordance with local/regional/national/international regulations.
Methods and material for containment and cleaning up : Ventilate area.

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. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools.

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

Additional hazards when processed : Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. Handle empty containers with care because residual vapors are flammable. In use may form flammable vapor-air mixture.

Safe use of the product : The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Avoid suck back of water, acid and alkalis. Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment. Purge air from the system before introducing gas. Take precautionary measures against static discharge. Keep away from ignition sources (including static discharges). Consider the use of only non-sparking tools. Do not breathe gas. Avoid release of product into work area. Ensure equipment is adequately earthed.

Safe handling of the gas receptacle : Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If the user experiences any difficulty operating valves, discontinue use and contact the supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as the container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Suck back of water into the container must be prevented. Open the valve slowly to avoid pressure shock.

Hydrogen (Compressed)

Safety Data Sheet

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

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Do not expose to temperatures exceeding 52 °C/ 125 °F. Keep the container closed when not in use. Protect containers from physical damage; do not drag, roll, slide or drop. Store in a well ventilated area.
Incompatible products	: None known.
Incompatible materials	: Oxidizing materials. Air.
Conditions for safe storage, including any incompatibilities	: Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep the container below 50°C in a well ventilated place. Store containers in locations free from fire risk and away from sources of heat and ignition. Keep away from combustible materials. Segregate from oxidant gases and other oxidants in store. All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrogen (Compressed) (1333-74-0)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	Substance is a simple asphyxiant that may create an atmosphere deficient in oxygen; available oxygen in the range of 19.5 percent to 23 percent by volume must be present.
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	Simple asphyxiant
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	Simple asphyxiant; EX (Substance is a flammable asphyxiant or excursions above the exposure limit could approach 10% of the lower explosive limit)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2022
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Hydrogen

Hydrogen (Compressed)

Safety Data Sheet

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

Hydrogen (Compressed) (1333-74-0)	
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2022
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2022
Canada (Ontario) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	Simple asphyxiant
Regulatory reference	Ontario Occupational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Hydrogen
Notations and remarks	TLV® Basis: Simple Asphyxiant
Regulatory reference	ACGIH 2022
USA - ACGIH - Occupational Exposure Limits	
Local name	Hydrogen
Remark (ACGIH)	TLV® Basis: Simple Asphyxiant
ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content
Regulatory reference	ACGIH 2022

Additional information : None available.

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure exposure is below occupational exposure limits (where available). Oxygen detectors should be used when asphyxiating gases may be released. Provide adequate general and local exhaust ventilation. Product to be handled in a closed system. Gas detectors should be used when flammable gases/vapors may be released. Consider the use of a work permit system e.g. for maintenance activities. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available).

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

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Protective clothing. Safety shoes. A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.

Hand protection:

Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk, performance level 1 or higher.

Hydrogen (Compressed)

Safety Data Sheet

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

Eye protection:

Wear safety glasses with side shields. Standard EN 166 - Personal eye-protection - specifications

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. Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known. Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers. Gas filters do not protect against oxygen deficiency. Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .

Personal protective equipment symbol(s):



Thermal hazard protection:

None necessary during routine operations.

Other information:

Wear safety shoes while handling containers. Consider the use of flame resistant anti-static safety clothing. Standard EN ISO 14116 - Limited flame spread materials. Standard EN 1149-5 - Protective clothing: Electrostatic properties. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Color	: Colorless
Odor	: Odorless
Odor threshold	: Odor threshold is subjective and inadequate to warn of overexposure.
pH	: Not applicable for gases and gas mixtures.
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable for gases and gas mixtures.
Molecular mass	: 2.0159 g/mol
Melting point	: -259 °C
Freezing point	: No data available
Boiling point	: -251.75 °C
Boiling point range	: No data available
Flash point	: Not applicable for gases and gas mixtures.
Critical temperature	: -238.95 °C
Auto-ignition temperature	: 560 °C
Decomposition temperature	: Not applicable.
Flammability (solid, gas)	: See Section 2.1 and 2.2 Extremely flammable gas.
Vapor pressure	: 6894688.342 mbar
Vapor pressure at 50 °C	: Not applicable.
Critical pressure	: 1293 kPa

Hydrogen (Compressed)

Safety Data Sheet

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

Relative vapour density at 20 °C	: 0.07
Relative density	: 0.07
Relative gas density	: Lighter than air
Solubility	: Water: 1.6 mg/l
Partition coefficient n-octanol/water (Log Pow)	: Not applicable for inorganic products.
Viscosity, kinematic	: No reliable data available.
Viscosity, dynamic	: No reliable data available.
	:
Oxidizing properties	: None.
Explosive limits	:
Lower explosive limit (LEL)	: 4 vol %
Upper explosive limit (UEL)	: 77 vol %

9.2. Other information

Additional information : Burns with an invisible flame.

SECTION 10: Stability and reactivity

Reactivity	: None known.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Can form explosive mixture with air. May react violently with oxidants.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7). Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Avoid moisture in installation systems.
Incompatible materials	: Oxidizing materials. Air. Air, Oxidisers. For additional information on compatibility refer to ISO 11114.
Hazardous decomposition products	: Under normal conditions of storage and use hazardous decomposition products should not be produced.
Hardening time:	: No data available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Hydrogen (Compressed) (1333-74-0)

LC50 Inhalation - Rat [ppm]	820000 ppm/4h
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ATE CA (Gases) Acute toxicity estimated	820000 ppmv/4h
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Skin corrosion/irritation	: Not classified pH: Not applicable for gases and gas mixtures.
Serious eye damage/irritation	: Not classified pH: Not applicable for gases and gas mixtures.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Hydrogen (Compressed)

Safety Data Sheet

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

Aspiration hazard : Not classified

Hydrogen (Compressed) (1333-74-0)

Viscosity, kinematic	No reliable data available.
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Symptoms/effects after inhalation : May displace oxygen and cause rapid suffocation.
Symptoms/effects after skin contact : Adverse effects not expected from this product.
Symptoms/effects after eye contact : Adverse effects not expected from this product.
Symptoms/effects after ingestion : Ingestion is not considered a potential route of exposure.
Symptoms/effects upon intravenous administration : Not known.
Most important symptoms and effects, both acute and delayed : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Refer to section 11.
Chronic symptoms : Adverse effects not expected from this product.
Other information : The substance/mixture has no endocrine disrupting properties.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological damage caused by this product.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

Hydrogen (Compressed) (1333-74-0)

BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.

hydrogen (1333-74-0)

Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.
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12.2. Persistence and degradability

Hydrogen (Compressed) (1333-74-0)

Persistence and degradability	No ecological damage caused by this product.
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12.3. Bioaccumulative potential

Hydrogen (Compressed) (1333-74-0)

Bioaccumulative potential	No ecological damage caused by this product.
BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.
Partition coefficient n-octanol/water (Log Kow)	Not applicable for gas mixtures.

hydrogen (1333-74-0)

Bioaccumulative potential	No ecological damage caused by this product.
Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.

Hydrogen (Compressed)

Safety Data Sheet

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

12.4. Mobility in soil

Hydrogen (Compressed) (1333-74-0)

Ecology - soil	No ecological damage caused by this product.
Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.
Partition coefficient n-octanol/water (Log Kow)	Not applicable for gas mixtures.

hydrogen (1333-74-0)

Ecology - soil	No ecological damage caused by this product.
Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.

12.5. Other adverse effects

Ozone	: Not classified
Effect on ozone layer	: No known effects from this product.
Other adverse effects	: No known effects from this product.
GWP 100 years	: 6
Effect on global warming	: When discharged in large quantities may contribute to the greenhouse effect.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Contact supplier if guidance is required. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods. Do not discharge into any place where its accumulation could be dangerous. Return unused product in original container to supplier.
Product/Packaging disposal recommendations	: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.
Additional information	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
List of hazardous wastes	: 16 05 04 *: Gases in pressure containers (including halons) containing hazardous substances.

SECTION 14: Transport information

In accordance with TDG / DOT / IMDG / IATA

14.1. UN number

UN-No. (TDG)	: Not applicable
DOT NA No	: UN1049
UN-No. (IMDG)	: 1049
UN-No. (IATA)	: 1049

14.2. UN proper shipping name

Proper Shipping Name	: Not applicable
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Hydrogen (Compressed)

Safety Data Sheet

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

Proper Shipping Name (DOT) : Hydrogen, compressed
Proper Shipping Name (IMDG) : HYDROGEN, COMPRESSED
Proper Shipping Name (IATA) : Hydrogen, compressed

14.3. Transport hazard class(es)

TDG

Transport hazard class(es) (TDG) : Not applicable
:

DOT

Transport hazard class(es) (DOT) : 2.1
Hazard labels (DOT) : 2.1
:



IMDG

Transport hazard class(es) (IMDG) : 2.1
Danger labels (IMDG) : 2.1
:



IATA

Transport hazard class(es) (IATA) : 2.1
Danger labels (IATA) : 2.1
:



14.4. Packing group

Packing group (TDG) : Not applicable
Packing group (DOT) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

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.

TDG

Excepted quantities (TDG) : E0

Hydrogen (Compressed)

Safety Data Sheet

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

Passenger Carrying Ship Index : Forbidden
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : Forbidden
Emergency Response Guide (ERG) Number : 115 (UN1049)

DOT

UN-No.(DOT) : UN1049
DOT Special Provisions (49 CFR 172.102) : N89 - When steel UN pressure receptacles are used, only those bearing the "H" mark are authorized.
DOT Packaging Exceptions (49 CFR 173.xxx) : 306
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) : Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg
DOT Vessel Stowage Location : E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded, D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other : 57 - Stow "separated from" chlorine, 40 - Stow "clear of living quarters"

IMDG

Special provisions (IMDG) : 274
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P200
EmS-No. (Fire) : F-D - FIRE SCHEDULE Delta - FLAMMABLE GASES
EmS-No. (Spillage) : S-U - SPILLAGE SCHEDULE Uniform - GASES (FLAMMABLE, TOXIC OR CORROSIVE)
Stowage category (IMDG) : E, D
Properties and observations (IMDG) : Flammable, odourless gas. Explosive limits: 4% to 75% Much lighter than air (0.07).

IATA

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : 200
CAO max net quantity (IATA) : 150kg
Special provisions (IATA) : A1
ERG code (IATA) : 10L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IBC code : Not applicable.

Hydrogen (Compressed)

Safety Data Sheet

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

SECTION 15: Regulatory information

15.1. National regulations

Hydrogen (Compressed) (1333-74-0)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Hydrogen (Compressed) (1333-74-0)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
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 KECL/KECI (Korean Existing Chemicals Inventory)
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

Training advice

: Ensure operators understand the flammability hazard.
In accordance with the Hazardous Products Act (February 11, 2015)
Reference number: CA-1001-01129
Version: 4.0 revision date: 21-12-2022

Full text of H-statements:

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.

Abbreviations and acronyms:

	UFI : Unique Formula Identifier
	ATE - Acute Toxicity Estimate
	CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
	REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
	EINECS - European Inventory of Existing Commercial Chemical Substances
	CAS# - Chemical Abstract Service number
	PPE - Personal Protection Equipment
	LC50 - Lethal Concentration to 50 % of a test population
	RMM - Risk Management Measures
	PBT - Persistent, Bioaccumulative and Toxic
	vPvB - Very Persistent and Very Bioaccumulative
	STOT- SE : Specific Target Organ Toxicity - Single Exposure
	CSA - Chemical Safety Assessment

Hydrogen (Compressed)

Safety Data Sheet

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

Abbreviations and acronyms:	
	EN - European Standard
	UN - United Nations
	ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
	IATA - International Air Transport Association
	IMDG code - International Maritime Dangerous Goods
	RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
	WGK - Water Hazard Class
	STOT - RE : Specific Target Organ Toxicity - Repeated Exposure

Safety Data Sheet (SDS), Canada (CUSTOM LEL/UEL)

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