SAFETY DATA SHEET

HYDROGEN GAS (<20 PSI)

North America EN
SDS No.: M1142

Rev. Date: 19-May-2026
Rev. Num. 06

SECTION 1. CHEMICAL PRODUCT / COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 14555 Dallas Parkway, Suite 400 Dallas, Texas 75254-4300
24-Hour Emergency Telephone Number:	1-800-733-3665 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	**HYDROGEN GAS (<20 PSI)**
Trade Name:	HYDROGEN GAS (<20 PSI)
Synonyms:	Hydrogen; Hydrogen gas
Product Use:	Chemical Intermediate; Fuel
Uses Advised Against:	Not for use in anaerobic chambers.

SECTION 2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: Health hazard classifications were performed using OSHA Hazard Communication 2024 (1910.1200) Appendix A and/or UN GHS Rev. 8 (2019). This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

HEALTH CANADA HPR REGULATORY STATUS: This material is considered hazardous by the Health Canada

HYDROGEN GAS (<20 PSI)

Hazardous Products Act's Hazardous Products Regulations (HPR) (SOR/2015-17).

HAZARD CLASSIFICATION:

GHS: PHYSICAL HAZARDS:	- Flammable Gas - Cat. 1A Extremely Flammable - Gas Under Pressure - Compressed
GHS: HEALTH HAZARDS NOT OTHERWISE CLASSIFIED (HHNOC)	- Simple Asphyxiant - May displace oxygen and cause rapid suffocation

UNKNOWN ACUTE TOXICITY:

Unknown Acute Oral Toxicity:
Not applicable.

Unknown Acute Dermal Toxicity:
Not applicable.

Unknown Acute Inhalation Toxicity:
100% of this product consists of ingredient(s) of known acute inhalation toxicity.

GHS SYMBOL: Flame, Gas cylinder



GHS SIGNAL WORD: **DANGER**

GHS HAZARD STATEMENTS:

GHS - Physical Hazard Statement(s)
• Extremely flammable gas
• Contains gas under pressure; may explode if heated

GHS - Precautionary Statement(s) - Prevention
• Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

GHS - Precautionary Statement(s) - Response
• Leaking gas fire: Do not extinguish, unless leak can be stopped safely
• Eliminate all ignition sources if safe to do so

GHS - Precautionary Statement(s) - Storage
• Protect from sunlight. Store in a well-ventilated place

GHS - Precautionary Statement(s) - Disposal
• There are no Precautionary Statement(s) - Disposal phrases assigned

Physical Hazards Not Otherwise Classified (HNOC) or Mentioned in GHS/CLP Classification:
• Forms explosive mixtures with air and oxidizing agents
• Steam can cause spontaneous combustion
• Vapor/air mixtures are explosive

• Hydrogen burns with an invisible flame

Health Hazards Not Otherwise Classified (HNOC) or Mentioned in GHS/CLP Classification
• Simple Asphyxiant - May displace oxygen and cause rapid suffocation

See Section 11: TOXICOLOGICAL INFORMATION

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Systematic Chemical Name	Common name	CAS Number	Percent [%]
Hydrogen 1333-74-0	Hydrogen	Hydrogen	1333-74-0	100

SECTION 4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation or injury occurs.

SKIN CONTACT: Not a likely route of exposure. If skin irritation occurs, get medical advice/attention. If frostbite or cold injury (from compressed/liquefied gas) immediately flush with lukewarm water (do NOT use hot water). Do not rub or remove adhered clothing, gently warm the affected area, and seek medical attention for severe injury.

INHALATION: Do not attempt rescue in confined spaces without adequate protective gear and proper training. If adverse effects occur, including loss of consciousness, remove to uncontaminated area. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

INGESTION: Not a likely route of exposure.

MOST IMPORTANT SYMPTOMS/EFFECTS (ACUTE AND CHRONIC [DELAYED]):
This material is a simple asphyxiant. The symptoms of asphyxia depend on the rapidity with which the oxygen deficiency develops and how long it continues. In sudden acute asphyxia, unconsciousness may be immediate. With slow development there may be rapid respiration and pulse, air hunger, dizziness, reduced awareness, tightness in the head, tingling sensations, incoordination, faulty judgment, emotional instability, and rapid fatigue. As the asphyxia progresses, nausea, vomiting, collapse, unconsciousness, convulsions, deep coma and death are possible.

Acute Symptoms/Effects:

Eye: No specific symptoms known for the gaseous form. In the event of an incident leading to contact with the liquid form, may cause frostbite.
Skin: No specific symptoms known for the gaseous form. In the event of an incident leading to contact with the

liquid form, may cause frostbite.
Inhalation (Breathing): Simple Asphyxiation. Acute inhalation may result in loss of consciousness with no warning due to displacement of oxygen. May cause other symptoms of hypoxia depending upon the oxygen level, such as air hunger, fatigue, increased pulse.
Ingestion (Swallowing): Ingestion is not a likely route of exposure because this material is a gas at normal conditions.

Chronic (Delayed) Symptoms/Effects:
No delayed / chronic effects have been identified.

PROTECTION OF FIRST-AID RESPONDERS: Protect first-aid responders from oxygen deficient environments and explosive environments.

NOTES TO PHYSICIAN: Treat for hypoxia and any hypoxia related conditions.

Interaction with Other Chemicals Which Enhance Toxicity: Any condition that reduces oxygenation will enhance toxicity upon interaction with other chemicals.

Medical Conditions Aggravated by Exposure: Any condition aggravated by reduced oxygenation will be aggravated by exposure.

SECTION 5. FIRE FIGHTING MEASURES

Fire Hazard: Severe fire hazard. Vapor/air mixtures are explosive. Burns with invisible flame even in the dark. Containers may rupture or explode if exposed to heat. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion. Gas may travel long distances to ignition sources and flashback. Gas in confined areas (e.g., tanks, sewers, buildings) may explode when exposed to fire. High-pressure releases often ignite without any apparent source of ignition. Exposure to rapidly expanding gas may cause frostbite.

Explosive properties: Forms explosive mixtures with air and oxidizing agents. Steam can cause spontaneous combustion. Vapor/air mixtures are explosive.

Extinguishing Media: Flood with fine water spray. Use dry chemical and carbon dioxide.

Unsuitable Extinguishing Media: Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards: Extremely flammable gas. Forms explosive mixtures with air. Burns with an invisible flame. Gas under pressure; containers may explode if heated. Vapors may flash back to ignition source.

Unusual Hazards: Hydrogen has unique fire and physical hazards. The gas ignites easily and has a wide flammable range in air. Leaks may be difficult to detect due to the colorless and odorless nature. Hydrogen burns with a nearly invisible flame. High diffusivity and small molecular size increase leak potential. Hydrogen may cause embrittlement of certain materials, leading to equipment failure.

Fire Fighting: Approach fire with caution as high-temperature flame is practically invisible. Do not attempt to

extinguish fire unless flow of material can be stopped first. Use water spray to keep fire-exposed containers cool. Use flooding quantities of water as fog or spray. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Keep unnecessary people away, isolate hazard areas and deny entry. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Evacuate if fire gets out of control or containers are directly exposed to fire. Let the fire burn. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Advice for Firefighters: Stay upwind. Determine the extent of the problem. Isolate the area of release or fire and deny entry. Remove all ignition sources. Cool exposed non-cryogenic containers with large quantities of water from unattended equipment or remove intact containers if it can be done safely. For container exposed to fire evacuate the area in all directions because of the risk of BLEVE or explosion.

Hazardous Combustion Products: Hydrogen oxides; Under normal fire conditions, hazardous combustion products could result from the incidental co-burning of neighboring materials

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Ground equipment in accordance with industry standards and best practices such as NFPA 77 [Recommended Practices on Static Electricity (2019)] and American Petroleum Institute (API) RP Recommended Practice 2003 [Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents (2015)]. Electrostatic charges may build up during handling and may form ignitable vapor-air mixtures in storage containers.

Lower Flammability Level (air): 4.1%.

Upper Flammability Level (air): 74.2%.

Flash point: No data available.

Auto-ignition Temperature: 1051 °F (566 °C).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Extremely flammable gas. Forms explosive mixtures with air and oxidizing agents. Eliminate all sources of ignition. Ventilate closed spaces before entering. Do not breathe gas. Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment: For Unknown Concentrations or exposures above IDLH (Immediately Dangerous to Life or Health) - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece. See Section 8 for information on personal protective equipment. When working around this material, consider the use of flame resistant and anti-static safety clothing and footwear.

Emergency Procedures: Evacuate unnecessary personnel and eliminate all sources of ignition. For other than minor leaks, immediately implement predetermined emergency plan.

Environmental Precautions: Stop leak, if possible, without personal risk. Releases should be reported, if required, to appropriate regulatory agencies.

Methods and Materials for Containment, Confinement, and/or Abatement: Keep unnecessary people away, isolate hazard areas and deny entry. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Ventilate closed spaces before entering. Stop leak, if possible, without personal risk. Reduce vapors with water spray.

Methods and Materials for Clean-up

Recovery: In case of spill or leak, stop the leak as soon as possible.
Neutralization: Ventilate confined area, if possible, without placing personnel at risk. Use explosion proof equipment when using local exhaust ventilation. Monitor the concentration of flammable gas and oxygen. Prevent the creation of flammable or explosive concentrations of hydrogen in air.
Final Disposal: No additional information available.

Additional Disaster Prevention Measures: Keep unnecessary people away, isolate hazard areas and deny entry. The primary hazard from a large release is fire. Eliminate all sources of ignition immediately if a release should occur. The public should be warned of any downwind vapor explosion hazards. Vapors or gases may travel long distances and ignite or cause a flashback fire to occur. Reduce vapors with water spray.

SECTION 7. HANDLING AND STORAGE

Handling:

Precautions for Safe Handling: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion proof equipment.
Technical measures/precautions: Use product only in closed system. Remove all sources of ignition. To avoid ignition by static electricity discharge, equipment must be bonded and grounded. Ground equipment in accordance with industry standards and best practices such as NFPA 77 [Recommended Practices on Static Electricity (2007)] and American Petroleum Institute (API) RP Recommended Practice 2003 [Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents (2008)]. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS. When working around this material, consider the use of flame resistant and anti-static safety clothing and footwear.

Other precautions: Ground any equipment used in handling.

Prevention of contact: Avoid release to the environment. Ensure adequate ventilation, especially in confined areas. This material is a simple asphyxiant, which can cause harm without warning properties or other physiologic effects. Do not breathe gas.

Storage:

Safe Storage Conditions: Keep away from open flames, hot surfaces and sources of ignition. Store and handle in accordance with all current regulations and standards. Store in a cool, dry, ventilated area away from heat, sparks and flame. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet). May be subject to local, regional, and/or national storage regulations. For example, in the United States, material storage is subject to OSHA 29 CFR 1910.106. Store only where temperatures will not exceed 52°C (125°F). Post "No Smoking or Open Flames" signs in storage and use areas. For indoor storage, use a fireproof, well-ventilated area isolated from

any sources of ignition. Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended.

Technical measures: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Ensure back flow prevention devices are installed in piping systems. Ground any equipment used in handling.

Incompatible Materials: Can form explosive mixtures with air, May react violently with oxidizing agents.

Packaging or Materials of Construction: Not applicable.

Additional Information:

Facilities should identify potential vulnerabilities by assessing the following:
1. appropriateness of existing static prevention, bonding, and grounding devices and consider additional preventative measures to prevent ignition of hydrogen while venting to atmosphere
2. control systems to ensure they are tuned and maintained to react to process upset conditions
3. preventative dilution measures and ensure they are acceptable for a wide range of operating conditions.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

REGULATORY EXPOSURE LIMIT(S):
This product does not contain any components that have regulatory occupational exposure limits (OELs) established.

NON-REGULATORY EXPOSURE LIMIT(S):
This product does not contain any components that have advisory (non-regulatory) occupational exposure limits (OELs).

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	Skin Absorption - ACGIH	NIOSH RELs	AIHA WEELs	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Hydrogen 1333-74-0 (100 %)	See Appendix F: Minimal Oxygen Content, explosion hazard	-----	-----	-----	-----	-----	-----	-----	-----

ENGINEERING CONTROLS: Use closed systems. Provide local exhaust ventilation where gas may be released.

PERSONAL PROTECTIVE EQUIPMENT:

Eye and Face Protection: Follow good hygiene practices. Wear safety glasses with side-shields. Chemical protective goggles when handling pressurized material.

Skin and Body Protection: As a good hygiene practice, wear appropriate protective clothing and footwear to minimize skin contact. Consider using flame resistant, anti-static safety clothing and footwear.

Hand Protection: As a good hygiene practice, wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Consider the use of flame resistant anti-static safety clothing.

Respiratory Protection: No personal respiratory protective equipment normally required. Use a NIOSH approved air-supplied respirator where presence of this product may decrease the oxygen level to concentrations less than 19.5%. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

Other Protective Equipment: Explosion-proof ventilation should be provided to keep concentrations below explosive limits.

HYGIENE MEASURES: Handle in accordance with good industrial hygiene and safety practices. Good hygiene practices include but are not limited to: wearing suitable gloves and/or eye protection; washing hands and affected skin immediately after handling, before breaks, and at the end of the workday; regularly cleaning work area and clothing; etc.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Compressed Gas
Physical State:	Gas
Color:	Colorless
Odor:	Odorless
Odor Threshold [ppm]:	No data available
Melting Point/Range:	Not applicable
Freezing Point/Range:	-434.6 °F (-259.2 °C)
Boiling point / boiling range	-252.762 °C
Evaporation Rate (ether=1):	Not applicable
Flammability (solid, gas):	Highly flammable 4 - 75 vol. %
Lower Flammability Level (air):	4.1%
Upper Flammability Level (air):	74.2%
Explosion limits:	4.1% - 74.2%
Flash point:	No data available
Auto-ignition Temperature:	1051 °F (566 °C)
Decomposition Temperature:	Not applicable
pH:	Not applicable
Viscosity:	No data available
Kinematic Viscosity:	No data available
Water Solubility:	0.019% by volume @ 21 °C
Partition Coefficient (n-octanol/water):	Not applicable
Vapor Pressure:	Gas at atmospheric pressure
Density:	No data available
Relative Density:	0.082 g/L
Relative Density/Specific Gravity (water=1):	No data available
Vapor Density (air=1):	0.069 (gas)

Particle Size Distribution: Not applicable

Other Information

Molecular Formula: H2
Explosive properties: Not applicable
Oxidizing properties: None
Volatility: 100% by volume
Hygroscopic: Not applicable

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and pressures.

Reactivity: Not reactive under normal temperatures and pressures.

Possibility of Hazardous Reactions: May react violently with oxidizing agents. Forms explosive mixtures with air. May react rapidly or explosively with halogens. Risk of ignition from static discharge, sparks, or hot surfaces. Hydrogen may cause embrittlement of certain metals, potentially leading to equipment failure and release.

Conditions to Avoid (e.g., static discharge, shock, or vibration): Keep away from heat, sparks, open flames, hot surfaces, and other sources of ignition. Containers may rupture or explode if exposed to heat. To avoid ignition by static discharge, equipment must be bonded and grounded.

Incompatible Materials: Can form explosive mixtures with air; May react violently with oxidizing agents

Hazardous Decomposition Products: Under normal conditions of storage and use, hazardous decomposition products should not be produced; As pure hydrogen does not contain carbon, there are no carbon-based pollutants, such as carbon monoxide (CO) or hydrocarbons (HC), nor is there any carbon dioxide (CO_2) in the exhaust. As hydrogen combustion occurs in an atmosphere containing nitrogen and oxygen, however, it can produce oxides of nitrogen known as NOx

Hazardous Polymerization: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE AND POTENTIAL HEALTH EFFECTS:

TOXICITY:
This material is a simple asphyxiant, which can cause harm without warning properties or other physiologic effects. Its major hazard is from its flammable and explosive character.

ACUTE TOXICITY:

Eye contact: Rapid evaporation of the material may cause frostbite to the eyes.

Skin contact: Direct skin contact with liquid or rapidly expanding gas may cause frostbite.

Inhalation: Simple Asphyxiant. May produce loss of consciousness without warning properties.

Ingestion: Exposure by ingestion is not considered relevant.

CHRONIC TOXICITY:

Chronic Effects: No chronic effects are known.

SIGNS AND SYMPTOMS OF EXPOSURE:

Inhalation (Breathing): Simple Asphyxiation. Acute inhalation may result in loss of consciousness with no warning due to displacement of oxygen. May cause other symptoms of hypoxia depending upon the oxygen level, such as air hunger, fatigue, increased pulse.

Skin: No specific symptoms known for the gaseous form. In the event of an incident leading to contact with the liquid form, may cause frostbite.

Eye: No specific symptoms known for the gaseous form. In the event of an incident leading to contact with the liquid form, may cause frostbite.

Ingestion (Swallowing): Ingestion is not a likely route of exposure because this material is a gas at normal conditions.

Interaction with Other Chemicals Which Enhance Toxicity: Any condition that reduces oxygenation will enhance toxicity upon interaction with other chemicals.

TOXICITY DATA:

PRODUCT TOXICITY DATA: See component data below.

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Not applicable to gases	Not applicable to gases	Simple Asphyxiant

COMPONENT TOXICITY DATA: The data are from public databases sources

Component	Oral LD50	Dermal LD50	Inhalation LC50
Hydrogen 1333-74-0	No data available	No data available	> 15000 ppm (Rat) 1 h

EYE IRRITATION/CORROSION: Contact with liquid or rapidly expanding gas may cause frostbite to contacted tissue (eyes).

SKIN IRRITATION/CORROSION: Contact with liquid or rapidly expanding gas may cause frostbite to skin.

SKIN ABSORBENT/DERMAL ROUTE: NO.
RESPIRATORY OR SKIN SENSITIZATION: Not classified as a skin or respiratory sensitizer per GHS criteria.

CARCINOGENICITY: This product is not classified as a carcinogen by NTP, IARC or OSHA.

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure): The substance is not classified as a specific target organ toxicant after single exposure per GHS criteria.

SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure): The substance is not classified as a specific target organ toxicant upon repeated exposure per GHS criteria.

INHALATION HAZARD: High concentrations of hydrogen in confined or closed environments can cause a lack of oxygen (asphyxiation).

GERM CELL/IN-VITRO MUTAGENICITY: Not classified as a mutagen per GHS criteria.

REPRODUCTIVE TOXICITY: Not classified as a reproductive toxin per GHS criteria.

DEVELOPMENTAL TOXICITY: Not classified as a developmental toxin per GHS criteria.

ASPIRATION HAZARD: Not classified as an aspiration hazard per GHS criteria.

TOXICOKINETICS: Not available.

METABOLISM: Not Available.

BIOLOGICAL DISTRIBUTION: No information available.

PATHOGENICITY AND ACUTE INFECTIOUSNESS (ORAL, DERMAL, AND INHALATION): Not applicable.

ENDOCRINE DISRUPTOR: This product does not contain any known or suspected endocrine disruptors.

NEUROTOXICITY: Not Available.

IMMUNOTOXICITY: Not Available.

Health Hazards Not Otherwise Classified (HNOC) or Mentioned in GHS/CLP Classification
• Simple Asphyxiant - May displace oxygen and cause rapid suffocation

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY (EC, IC, and LC):

Aquatic Toxicity:
This material is believed to be practically non-toxic to aquatic life.

FATE AND TRANSPORT:

PERSISTENCE: This material is believed not to persist in the environment.

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

BIOCONCENTRATION: This material will not bioaccumulate.

BIOACCUMULATIVE POTENTIAL: Does not bioaccumulate.

MOBILITY IN SOIL: Not applicable.

ADDITIONAL ECOLOGICAL INFORMATION: No ecological damage caused by this product.

Persistent, Bioaccumulative, and Toxic (PBT) and Very Persistent and Very Bioaccumulative (vPvB) Assessment: Not applicable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from material:
Use or reuse if possible. May be subject to disposal regulations. Dispose in accordance with all applicable regulations.

Container Management:
Dispose of container in accordance with applicable local, regional, national, and/or international regulations.

Contaminated Material:
Dispose of contaminated material in accordance with appropriate regulations.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

UN NUMBER:	UN1049
PROPER SHIPPING NAME:	Hydrogen, compressed
HAZARD CLASS/ DIVISION:	2.1
PACKING GROUP:	NA
LABELING REQUIREMENTS:	2.1
Special provisions for transport:	Tank Carriage: Passage forbidden through tunnels of category B, C, D and E Additional tunnel restrictions may exist. Verify local, regional, and/or national regulations
ADDITIONAL INFORMATION:	Emergency Response Guide Number 115.

*** NOTE:** N89 - When steel UN pressure receptacles are used, only those bearing the "H" mark are authorized (49 CFR 172.102)

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER: UN1049
SHIPPING NAME: Hydrogen, compressed
CLASS OR DIVISION: 2.1
PACKING/RISK GROUP: NA
LABELING REQUIREMENTS: 2.1

MARITIME TRANSPORT (IMO / IMDG)

UN NUMBER: UN1049
PROPER SHIPPING NAME: HYDROGEN, COMPRESSED
HAZARD CLASS / DIVISION: 2.1
Packing Group: Not applicable
ADDITIONAL INFORMATION: Emergency Schedule (EmS): Fire (F-D); Spillage (S-U)

AIR TRANSPORT (ICAO / IATA)

Status - ICAO/IATA: Transport by passenger and cargo aircraft is forbidden

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

SECTION 15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:
Health hazard classifications were performed using OSHA Hazard Communication 2024 (1910.1200) Appendix A and/or UN GHS Rev. 8 (2019). This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
Not regulated.

SARA EHS Chemical (40 CFR 355.30)
Not regulated.

SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):
Physical Hazard - Flammable (gases, aerosols, liquids, or solids)
Physical Hazard - Gas Under Pressure
Health Hazard - Simple Asphyxiant

EPCRA SECTION 313 (40 CFR 372.65):
Not regulated.

DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):
The following components are regulated under DHS:

Component	DHS - Security	DHS-Sabotag	DHS-Sabotag	DHS-Theft	DHS-Theft	DHS-Release	DHS-Release	CWC Toxic

HYDROGEN GAS (<20 PSI)

SDS No.: M1142
Supersedes Date: 2019-04-September

Rev. Date: 19-May-2026
Rev. Num. 06

	Issues	e Screening Threshold Qnty.	e Min. Conc.	Screening Threshold Qnty.	Min. Conc.	Screening Threshold Qnty.	Min. Conc.	Chemicals:
Hydrogen 1333-74-0 (100)	Release - Flammable	Not Listed	Not Listed	Not Listed	Not Listed	10000 lbs. STQ	1.0% Minimum Concentration	Not Listed

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):
The PSM standard may apply to processes which involve a flammable liquid or gas in a quantity of 10,000 pounds (4535.9 kg) or more.

Component	EPA RMP Toxic or Flammable TPQ	PSM - Highly Hazardous Substances, Toxics and Reactives	Flash Point
Hydrogen 1333-74-0 (100)	Flammable (10000 lbs. threshold quantity)	Not Listed	

EPA'S CLEAN WATER AND CLEAN AIR ACTS:
Regulated as noted in table below.

Component	Clean Water Act - Priority Pollutants	CAA - ODS CLASS 1 AND CLASS 2	CAA - Volatile Organic Compounds (VOCs) in SOCMI	CAA - HON Rule - Organic HAPs	CAA - Hazard Air Pollutants	CAA - Urban HAPs List (Integrated Urban Strategy)	SNAP - Substitutes for ODS	EPA RMP Toxic or Flammable TPQ
Hydrogen 1333-74-0 (100 %)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Flammable (10000 lbs. threshold quantity)

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA/Section 4	TSCA/Section 5	TSCA/Section 6	TSCA/Section 8
Hydrogen 1333-74-0 (100 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not Listed	Not listed

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Hydrogen 1333-74-0 (100)	Listed	Not Listed

STATE REGULATIONS

California Proposition 65:
This product is not listed on the California Governor's current list of Carcinogens, Reproductive Toxicants, and/or Candidate Carcinogens (Proposition 65), but it may contain trace amounts of impurities that are listed. For additional information, contact Occidental Chemical Corporation Customer Service (1-800-752-5151 or 1-972-404-3700).

Component	U.S. - California - Proposition 65 - Carcinogens List	CA. Prop. 65 Teratogen	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	Rhode Island Right to Know Hazardous Substance List
Hydrogen	Not listed	Not listed	Not Listed	Not Listed	Listed	Listed

1333-74-0 (100 %)						

Component	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List
Hydrogen	1010	flammable - fourth degree	Listed	Listed	Not Listed	Not Listed

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Workplace Hazardous Materials Information System (WHMIS 2015) which includes the amended Hazardous Products Act (HPA) and the Hazardous Product Regulations (HPR).

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - Greenhouse Gases (GHG) Subject to Mandatory Reporting	Canadian Chemical Inventory:	NDSL
Hydrogen 1333-74-0 (100)	Not listed	Not Listed	Not Listed	Listed on inventory	Not Listed

SECTION 16. OTHER INFORMATION

Prepared by: Occidental Chemical Corporation - HES&S Product Stewardship Department

Rev. Date: 19-May-2026

• SDS format adopts revisions to the Hazardous Products Regulations (HPR) to include revisions to “Section 9: Physical and chemical properties” and ensures classification with at a minimum the seventh revised edition of GHS and certain elements from the eighth revised edition (Revision 8)
• SDS format adopts revisions to the OSHA's 2024 Hazard Communication Rule 29CFR 1910.1200 and ensures classification with at a minimum the seventh revised edition of GHS and certain elements from the eighth revised edition (Revision 8)

IMPORTANT:
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available to your employees.

End of Safety Data Sheet