



SAFETY DATA SHEET

SDS No. : SDS – 006
Revision : 0
Issue Date : 04.09.2015



HYDROGEN (Compressed)

1. IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING.

Trade/ Commercial Name Hydrogen (compressed)
Chemical Description Hydrogen
CAS No: 001333-74-0, EC No: 251-605-7, Index No.: 001-001-00-9
Chemical Formula H₂
Use Industrial & Professional. Perform risk assessment prior to use.
Company Identification Air Liquide India Holding Pvt. Ltd.
A-24/9, Mohan Co-operative Industrial Estate,
Mathura Road, New Delhi-110044.
Emergency Contact No. **011-30157288**

2. HAZARDS IDENTIFICATION

Physical Hazards Flammable Gases – Category 1 – Danger (H220)
Gases under pressure – Compressed gas – Warning (H280)

Label Elements Flammable 2.1  Compressed Gas 

Hazard Pictograms Code GHS02 - GHS04

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

Precautionary Statements P210: Keep away from the Heat/ Spark/ Open flame/ Hot surface - No Smoking.
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381: Eliminate all ignition sources if to do so.

Storage P403: Store in a well-ventilated place.

Other Hazards Form explosive mixture with air.

Symbol(s) F+ Extremely flammable.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Name	CAS (Product identifier)	%
Hydrogen	1333-74-0	99.5 - 100%

4. FIRST AID MEASURES

Inhalation In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/ consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Ingestion Ingestion is not considered a potential route of exposure.

5. FIRE FIGHTING MEASURES

Specific Hazard Exposure to fire may cause containers to rupture/ explode.

Hazardous Combustion None.

Suitable Extinguishing Media All known extinguishants can be used.

Products Specific Methods If possible, stop the flow of product. Move away from the container and cool with water from a protected position.
Water surrounding area (from protected position) to contain fire.

Special Protective Equipment for Fire Fighters In confined space use self-contained breathing apparatus.

HYDROGEN (Compressed)**6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Evacuate area. Use self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

Ensure adequate ventilation and eliminate ignition sources.

Environmental Precautions

Try to stop release.

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be.

Methods for Cleaning up

Ventilate the area and keep evacuated.

7. HANDLING & STORAGE**Handling**

Take precautionary measures against static discharge.

Purge air from system before introducing gas.

Suck back of water into the container must be prevented.

Do not allow back feed into the container.

Use only properly specified equipment which is suitable for this product.

Its supply pressure and temperature. Contact your gas supplier (if in doubt).

Keep away from ignition sources (including static discharges).

Storage

Segregate from flammable gases and other flammable material in the store.

Keep container below 50°C in a well ventilated place.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**Personal Protection**

Do not smoke while handling the product. Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes. Use proper PPEs, while using the product. Avoid oxygen deficiency (<21%) atmospheres.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Physical State at 20°C**

Gas.

Color

Colorless Gas.

Odor

None.

Molecular Weight

2 g/mole.

Molecular Formula

H₂

Boiling/ Condensation Point

-253°C

Melting/ freezing point

-259°C

Critical temperature

-240°C

Relative Density, Gas (air=1)

0.07

Relative Density, Liquid (water=1)

0.07

Flammability Range (vol. % in air)

4% to 75%

Auto-Ignition Temperature

560°C

Other Data

Burn with an invisible flame.

10. STABILITY AND REACTIVITY**Stability and Reactivity**

Can form explosive mixture with air.

May react violently with oxidants, Air, oxidizer.

Keep away from heat/ sparks/ open flames/ hot surface. No smoking.

Hazardous Decomposition Products

None.

11. TOXICOLOGICAL INFORMATION**Toxicity Information**

No known toxicological effect from this product.



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12. ECOLOGICAL INFORMATION

Ecological Effect Information

No known ecological damage caused by this product.

13. DISPOSAL CONSIDERATIONS

General

Do not discharge into area 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.

Do not discharge into any place where its accumulation could be dangerous.

Contact supplier if guidance required.

14. TRANSPORT INFORMATION

UN Number

1049

Labeling ADR, IMDG, IATA

Flammable gas (2.1)



Land Transport:

UN Proper Shipping Name

Hydrogen, Compressed.

Transport Hazard Class

2.1

Hazchem code

2SE

Tunnel/ Underpass Restriction

Passage forbidden through long tunnels and underpasses.

Avoid transport on vehicles where the load space is not separated from the driver's compartment.

Ensure vehicle drivers are aware of the potential hazards of the load and know what to do in the event of an accident or an emergency.

Before transporting product containers ensure:

- That container is firmly secured.
- Cylinder valve is closed and not leaking.
- Valve outlet cap nut or plug (where provided) is correctly fitted.
- Valve protection device (where provided) is correctly fitted and
- Product transport container/ tank should keep or stand in well ventilated area.

15. REGULATORY INFORMATION

Workplace Hazardous Materials Information System (WHMIS)

1. **Class A:** Compressed gas.
2. Flammable (2.1).
3. Ensure all national/ local regulations are observed.

16. OTHER INFORMATION

- May explode.
- Keep container in a well-ventilated place.
- Do not breathe the gas.
- Extremely flammable.
- The hazard and asphyxiation are often overlooked and must be stressed during operator training.

DISCLAIMER OF LIABILITY:

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.