

Hydrogen



SAFETY DATA SHEET

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Hydrogen
Chemical Formula H₂
Recommended Use General Industrial
Company Name Irish Oxygen Co Ltd,
Waterfall Road, Cork
Email sds@irishoxygen.com
Emergency Phone 021-4541821
(office hours only)

2. HAZARDS IDENTIFICATION

Compressed gas
Extremely flammable

GHS Hazard Pictograms



3. COMPOSITION INFORMATION

Substance/Preparation Substance
Composition No other components
CAS No 01333-74-0
EINECS No 215-605-7

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 breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Ingestion
Not considered a potential route of exposure
Skin contact
Not considered a potential route of exposure
Eye contact
Not considered a potential route of exposure

5. FIRE FIGHTING MEASURES

Specific hazard

Exposure to fire may cause containers to rupture or explode which may release asbestos. Inform Fire Brigade

Hazardous combustion products

None

Suitable extinguishing media

All known extinguishers can be used.

Specific methods

If possible, stop flow of product.
Move container away or cool with water from protected position.
Do not extinguish a leaking gas flame unless absolutely necessary.
Spontaneous/explosive re-ignition may occur.
Extinguish any other fire.

Special protective equipment for fire fighters

In confined space use self contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area.
Wear self contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Ensure adequate air ventilation.
Eliminate ignition sources.

Environmental precautions

Try to stop release.

Clean up methods

Ventilate area.

Special procedures for leaking hydrogen cylinder:

Leak not ignited

Extinguish all ignition sources
Check the valve is properly closed using moderate force (hand tight)
DO NOT try to tighten cylinder valve in the body of the cylinder or tamper with safety devices

Leak ignited

Extinguish all ignition sources
Extinguish the flame with a dry powder extinguisher or wet rag if safe to do so
Wear leather gauntlets and keep hands clear of any fusible plugs
Close cylinder valve if safe to do so

7. HANDLING AND STORAGE

Close cylinder valve when not in use to prevent contamination of cylinder. Open valve slowly to avoid pressure shock. Purge air from system before introducing gas. Do not allow back feed into cylinder. Use only properly specified equipment that is suitable for Hydrogen, its supply pressure and temperature. Keep cylinder below 50°C in a well ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ensure adequate ventilation.
Do not smoke while handling hydrogen cylinder or equipment.
Wear suitable hand, body and head protection.
Action in the event of a flashback: Close the cylinder valve, check equipment. If cylinder becomes hot, take action as in leak ignited

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Colour /Odour	Colourless odourless gas
Molecular Weight	2
Melting Point	-259°C
Boiling Point	-253°C
Critical Temperature	-240°C
Relative Density - Gas	0.07 (Air=1)
Relative Density - Liquid	0.07 (Water=1)
Vapour Pressure 20°C	Not applicable
Solubility mg/l water	1.6 mg/l
Auto ignition temperature	560°C
Flammability Range	4%-75% volume in air
Other Data	Burns with colourless invisible flame

10. STABILITY AND REACTIVITY

Can form explosive mixture with air.
May react violently with oxidants.

11. TOXICOLOGICAL INFORMATION

No known toxicological effects from this product.

12. ECOLOGICAL INFORMATION

No known ecological damage caused by this product.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

UN Number:	1049
Class/Div:	2.1
ADR/RID Classification code:	1F
ADR/RID Hazard Number:	23
Labelling ADR:	2.1:flammable gas

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 emergency. Before transporting product cylinders, ensure that they are firmly secured, that cylinder valve is closed and not leaking, that there is adequate ventilation and that applicable regulations are complied with

15. REGULATORY INFORMATION

Number in Annex 1 of Dir 67/548	001-001-00-1
EC Classification	R12/F+
Risk Phrases	F+ Extremely flammable R12 Extremely flammable
Safety Phrases	S9 Keep cylinder in a well ventilated place S16 Keep cylinder away from ignition sources S33 Keep cylinder away from possible static discharge

16. OTHER INFORMATION

The information given here is based on the present state of knowledge and describes the product under the aspects of safety. It should not therefore be construed as guaranteeing specific properties. 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.

CYLINDER DETAILS

Cylinder Type	Nominal Capacity M ³	Approx Dimensions (mm)	Approx gross Cylinder weight (Kg)
7	7.25	1620 x Ø 230	90
MW	1.45	648 x Ø152	12

Outlet Connection: BS341 No 4: Left hand 5/8" BSP female cone recessed.