

Hydrogen

1 Identification of the substance/preparation and of the company/undertaking

Product name : Hydrogen
Chemical formula : H₂
Use of substance : General Industrial
Company : Dixons of Westerhope Ltd
Newbiggin Lane
Westerhope
Newcastle upon Tyne
NE5 1LX
Emergency contact : 0191 271 0222

2 Composition/information on ingredients

Components	EINECS/ELINCS	CAS	Concentration	Class
Hydrogen	215-605-7	1333-74-0	100%	F+ R12

Contains no other components or impurities which will influence the classification of the product. Refer to section 16

3 Hazards identification

Classification : F+ / R12 - refer to section 16
Compressed gas
Extremely flammable

4 First aid measures

Inhalation : May cause asphyxiation, asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves. Remove victim to fresh air. Keep victim warm and rested. Call a doctor and apply artificial respiration if breathing has stopped.

Ingestion : Ingestion is not considered a potential route of exposure

5 Fire-fighting measures

Flammable class : Extremely flammable

Hazardous combustion products : None

Extinguishing media : All known extinguishing media can be used.

Specific hazards : Exposure to fire may cause containers to rupture/explode.

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

Protective equipment : Wear self-contained breathing apparatus for fire fighting if necessary.

6 Accidental release measures

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

Environmental precautions : Try to stop release.

Clean up methods : Ventilate the area.

7 Handling and storage

Handling : Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed 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 : Keep container in a well ventilated area. Store cylinder below 50°C. Segregate from oxidant gases and other oxidants in store.

See reverse for further handling, usage and storage guidelines

8 Exposure controls/personal protection

Personal protection : Ensure adequate ventilation. Do not smoke while handling product.

9 Physical and chemical properties

Form : Compressed gas

Colour : Colourless

Odour : None

Molecular weight : 2

Melting point : -259°C

Boiling point : -253°C

Critical temperature : -240°C

Vapour pressure : Not applicable

Relative density, gas : 0.07 (air - 1)

Relative density, liquid : 0.07 (water - 1)

Solubility in water : 1.6 mg/l

Flammability range : 4 to 75 (volume % in air)

Auto-ignition temperature : 560°C

Other data : Burns with a 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 effects from this product

13 Disposal considerations

Do not discharge into any areas where accumulation could be dangerous.
Return cylinders to the supplier (used and unused)

14 Transport Information

Proper Shipping Name : Hydrogen, Compressed

UN ID no. : UN1049

Labelling ADA : 2

ADR/RID hazard ID no. : 1 F

Labelling :



Further information : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting gas cylinders

1. Ensure that cylinders are secured
2. Ensure cylinder valves are closed
3. Ensure cylinder shroud is secure
4. Ensure there is adequate ventilation

15 Regulatory information

EC classification : Annex No : 001-001-00-9
F+ R12

EC labelling symbols : F+ Extremely flammable

R phrases : R12 Extremely flammable

S phrases : S9 Keep container in a well-ventilated place
S16 Keep away from sources of ignition
S33 Take precaution against static discharge

16 Other information

Ensure all regulations are observed. Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during 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.

In case of emergency
0191 271 0222

Additional storage, usage & handling advice

Guidance for storing gas cylinders

• TAKE PRECAUTION - EXTREMELY FLAMMABLE

- Store cylinders in a well-ventilated covered area, preferably outside on a level, well-drained surface. If this is not reasonably practicable, store in an adequately ventilated building or part of a building specifically reserved for this purpose
- Full and empty cylinders should be stored separately
- Cylinder stocks should be rotated so that the oldest cylinders are used first
- Cylinders should be stored vertically and securely fastened to prevent them from falling over
- Segregate cylinder by properties of gas
Flammable
Oxidising
Inert etc.
- Ensure that gas cylinder valves are kept shut on empty cylinders
- Avoid storing gas cylinders so that they stand or lie in water - Oxygen must be stored away from oil or grease
- Protect gas cylinders from external heat sources that may adversely affect their mechanical integrity
- Gas cylinders containing flammable gas should not be stored in part of a building used for other purposes
- Do not store other products in a cylinder store, in particular flammable materials such as fuel, oil, paint or corrosive liquids
- Gas cylinders must be clearly marked to show what they contain and the hazards associated with their contents
- Store cylinders where they are not vulnerable to hazards caused by impact from vehicles such as fork-lift trucks
- Do not store LPG cylinders within three metres of other gas cylinders - The use of a firewall reduces the distance to 1.5 meters

There are specific requirements for certain products. Storage of cryogenic, liquefied (e.g. Propane) and heavier than air compressed gases should be sited with due regard to the dangers of gases collecting in low-lying areas such as drains, basements and ducts.

It is advisable to label your storage area with relevant hazard labels and colour code chart.

Guidance for handling gas cylinders

- When required, wear suitable safety shoes and other personal protective equipment when handling gas cylinders
- Carry cylinders close to your body to reduce stress on your back
- Gas cylinders should not be raised or lowered on the forks of lift trucks unless precautions are taken to prevent them from falling
- It is advisable to use a trolley if moving several cylinders to reduce risk of injury
- Do not drop, roll or drag gas cylinders
- Do not attempt to lift cylinders if they are located in a position where you have to lean over or stretch to carry them, this can cause back strain
- Use the correct techniques for lifting heavy objects
- Ensure that the valve is protected by a shroud that has been designed to withstand impact if the cylinder is dropped
- Fit suitable protective caps and covers to cylinders, when necessary, before transporting. Caps and covers help prevent moisture and dirt from gathering in the valve of the cylinder, in addition to providing protection during transport

Guidance for using gas cylinders

- Use gas cylinders in a vertical position, unless specifically designed to be used otherwise
- Always double check that the gas is the right one for the intended use
- Before connecting a gas cylinder to equipment, make sure that the regulator and pipework are suitable for the type of gas and pressure being used
- When not in use, disconnect regulators and hoses from cylinders whenever practicable
- Do not use gas cylinders for anything other than the transport and storage of gas

Only use cylinders filled by a reputable gas company who fills and tests cylinders regularly in accordance to regulations. Only ever return empty gas cylinders to the supplier from which they were purchased. Never attempt to fill a Hobbyweld cylinder from another gas cylinder.