

# Fine Gas Company Limited

Document Number  
QCS/SDS/08

## Safety Data Sheet: Hydrogen (H<sub>2</sub>)

Revision Number  
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<b>1</b>	<b>Product</b>	Hydrogen (H <sub>2</sub> )
<b>2</b>	<b>Hazard Identification</b>	Can cause rapid Suffocation. Extremely flammable. May form Explosive mixture in air. Immediate fire and explosion hazard Exists when mixed with air. High concentrations can cause rapid Suffocation within the flammable range. Don't enter the range and Avoid breathing gas. Burns with an invisible flame. High pressure gas
<b>3</b>	<b>Potential Health Effects</b>	
<b>3.1</b>	<b>Breathing</b>	In high concentrations, may cause asphyxiation. Symptoms may Include loss of mobility and consciousness. Patient may not be aware of this and it may bring about so quickly that patient may not be able to protect him / her self
<b>3.2</b>	<b>Contact</b>	No adverse effect
<b>4</b>	<b>Aggravated Medical Condition</b>	Nil
<b>5</b>	<b>First Aid Measures</b>	Remove Patient to uncontaminated area. Keep him / her warm And rested. Call a doctor and apply artificial respiration if Breathing gets stopped. Seek medical advice immediately
<b>5.1</b>	<b>Eye Contact</b>	Rinse immediately with plenty of water for at least 15 minutes
<b>5.2</b>	<b>Skin Contact</b>	Wash with water and soap as a precaution
<b>6</b>	<b>Fire Fighting Measures</b>	
<b>6.1</b>	<b>General</b>	Ignitable by static electricity. Gas is lighter than air so it can Accumulate in the upper section of confined spaces. Upon exposure to intense heat or flame, cylinder will vent rapidly And can rupture also. Keep cylinder and surrounding area cool by Spraying cool water. Extinguish fire only if gas flow can be Stopped. If possible, shut off the source of the gas and allow the Fire to burn itself out. Don't extinguish a leaking gas flame until Absolutely necessary. Spontaneous / explosive reignition may Occur. Extinguish any other fire. Move away from container and spray water on cylinder and its adjacent cylinders from a Protected position. If flames are accidentally extinguished, explosive reignition may occur, so evacuate the area immediately to protect people from cylinder fragments and toxic fumes should Any rupture occurs. Most cylinders are designed to vent contents when exposed to elevated temperatures
<b>6.2</b>	<b>Specific Hazard</b>	Wear self contained breathing apparatus for fire fighting / rescue operation if necessary
<b>7</b>	<b>Accidental Release Measures</b>	Evacuate personnel's to safe and uncontaminated areas. Remove All sources of ignition. Wear self contained breathing apparatus when entering gas concentrated areas unless atmosphere is proved to be safe
<b>8</b>	<b>Handling &amp; Storage</b>	Hydrogen is lighter than air & is compressed. Protect cylinders from physical damage like dragging, rolling, sliding, dropping etc. Don't allow storage area temperature to reach more than 50 °C (122 °F). Only experienced and trained personnel are allowed to

Handle compressed gases. Use trolley or cart for moving cylinder Even for a shorter distance. Ensure complete gas system has Been checked for leaks before use. Open valve slowly. If user feels any difficulty in the operation of the cylinder valve, never use the cylinder or try to repair / modify its valves or safety relief Devices. Close valve after use or when cylinder is empty. Don't Subject cylinder to any mechanical shock or lifting it by its valve. Don't use cylinders for uses for which they are not designed or Specified. Never strike an arc on a compressed gas cylinder or Making it a part of the electrical circuit. Don't allow any ignition, Spark or flame in the cylinder handling & storage area. Never recompress the gas or its mixture or transfer gas from one Cylinder to another. Never use any electrical or any other heating Device to raise the pressure of the gas cylinder. Cylinders should be stored in a purpose built compound which should be well Ventilated, preferably in an open air. Stored cylinders should be Periodically checked for general condition or leakage. Always Safe guard cylinders from rust and extreme weather conditions. Full and empty cylinders should be properly segregated in the Storage area. Display board should be hanged outside storage & Handling area of "No Smoking / Open Flames". Toxic and Flammable gases should always be stored in a minimum quantity. Secure cylinder vertically & properly to prevent them from toppling Return empty containers in a timely manner. Hydrogen gas storage should be separated from oxygen and other oxidizers by a minimum distance of 20 ft or by a non-combustible material Barrier for at least 5 ft. All electrical equipment in the storage area Should be compatible with flammable materials stored. Non-Ferrous tools are recommended to avoid spark. All tools should have insulated handles.

**9 Personal Protective Equipment**

- 9.1 Hands Protection** Work gloves are recommended while handling cylinders
- 9.2 Eyes Protection** Safety Glasses are recommended for eyes protection
- 9.3 Skin & Body Protection** Wear appropriate personal protective equipment like Safety Shoes, flame resistant protective clothes etc. when handling cylinders

**10 Physical & Chemical Properties**

- 10.1 Physical Status** Compressed Gas
- 10.2 Colour** Colourless
- 10.3 Odour** Odourless
- 10.4 Boiling Point** -252.9 °C (-423 °F )

**11 Stability & Reactivity**

Stable under normal conditions. Heat, flames and sparks to be Avoided. May form explosive mixture when mixed with air Or oxidizing agent. Oxidizing agent and oxygen to be avoided

Prepared By Management Representative	Reviewed By Production Manager	Approved By General Manager	Issued On 01/04/06
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