

CALTECH ENVIRONMENT, HEALTH AND
SAFETY OFFICEHydrogen Gas - H₂

Hydrogen (H₂) is a colorless, odorless, flammable gas which is compressed to high pressure. The flammable range of hydrogen is 4.0% - 75.0 % in air.

High-pressure leaks can ignite spontaneously and burn with a colorless flame. This Safety Bulletin discusses precautions that should be taken when using Hydrogen.

Safety Precautions for Hydrogen Use

- User training
 - MSDS (Material Safety Data Sheets) on Hydrogen should be available to anyone working with this gas, online versions can be obtained from
 - www.hazard.com.
- Safe Work Practices
 - Select and use the correct regulator connector by checking the CGA number.
 - Incorrect connectors can sometimes be installed on inappropriate gas cylinders.
 - CGA 350 is the standard connector for Hydrogen.
 - Check the overall condition of the regulator.
 - Do not use a regulator that has been used for other gases.
 - Leak test the connections.
 - Never work on a pressurized system.
 - If there is a leak, close the cylinder valve.
 - Purge the system in a safe manner.
- Handling and Storage
 - Use adequate ventilation.
 - Separate Hydrogen cylinders from oxygen, chlorine, and other oxidizers by at least 20 feet (6.1 meters) or use an approved gas cabinet.
 - Store only where temperatures will not exceed 125° F (52° C).
 - There must be no sources of ignition in areas where Hydrogen is being stored.
 - Segregate empty cylinders from full cylinders.
 - When a cylinder is not in use, screw the valve protection cap firmly in place.
 - Secure cylinders upright at the top and bottom. Adjust the cylinder racks so that cylinders are tightly secured.
- Personal Protective Equipment
 - Wear safety glasses when handling any compressed gas.
 - EH&S Can Help
 - Contact us at x6727 if you need assistance with training on hazards, proper storage, handling and emergency procedures, or if you have any questions regarding the use of Hydrogen.