

HYDROGEN FACT SHEET

COMPRESSED GAS ASSOCIATION



4 THINGS YOU SHOULD KNOW ABOUT HYDROGEN SAFETY

1. Hydrogen is Hard to Detect

Hydrogen is odorless, colorless, and tasteless, so most human senses won't help to detect a leak. Because of this, the industry often uses hydrogen sensors to help detect hydrogen leaks and has maintained a high safety record using them for decades.

2. Hydrogen is Lighter than Air

Hydrogen is 14 times lighter than air and rapidly rises. If it becomes trapped hydrogen can easily collect ignite and explode.

Canopies/roofs over hydrogen systems must prevent the accumulation of hydrogen and include a properly designed hydrogen vent system. Any canopy over hydrogen systems must direct the outlets of all hydrogen vent devices to vent systems that releases hydrogen above the canopy.

3. Hydrogen is Flammable

Like gasoline and natural gas, hydrogen is flammable and can behave dangerously under specific conditions. Hydrogen has a wide flammability range (4-74% in air) and the energy required to ignite hydrogen can be very low.

4. Hydrogen Atoms are Small

Hydrogen embrittlement is a phenomenon in which hydrogen atoms enter the crystal structure of a metal and cause it to become brittle and prone to failure. It is most commonly observed in high-strength steels, such as those used in the construction of bridges and pipelines.

Hydrogen embrittlement occurs most notably in steels, as well as in iron, nickel, titanium, cobalt, and their alloys. Copper, aluminum, and stainless steels are less susceptible to hydrogen embrittlement.

[Learn More at SafeHydrogenProject.org](https://SafeHydrogenProject.org)