

THE ELEMENTAL

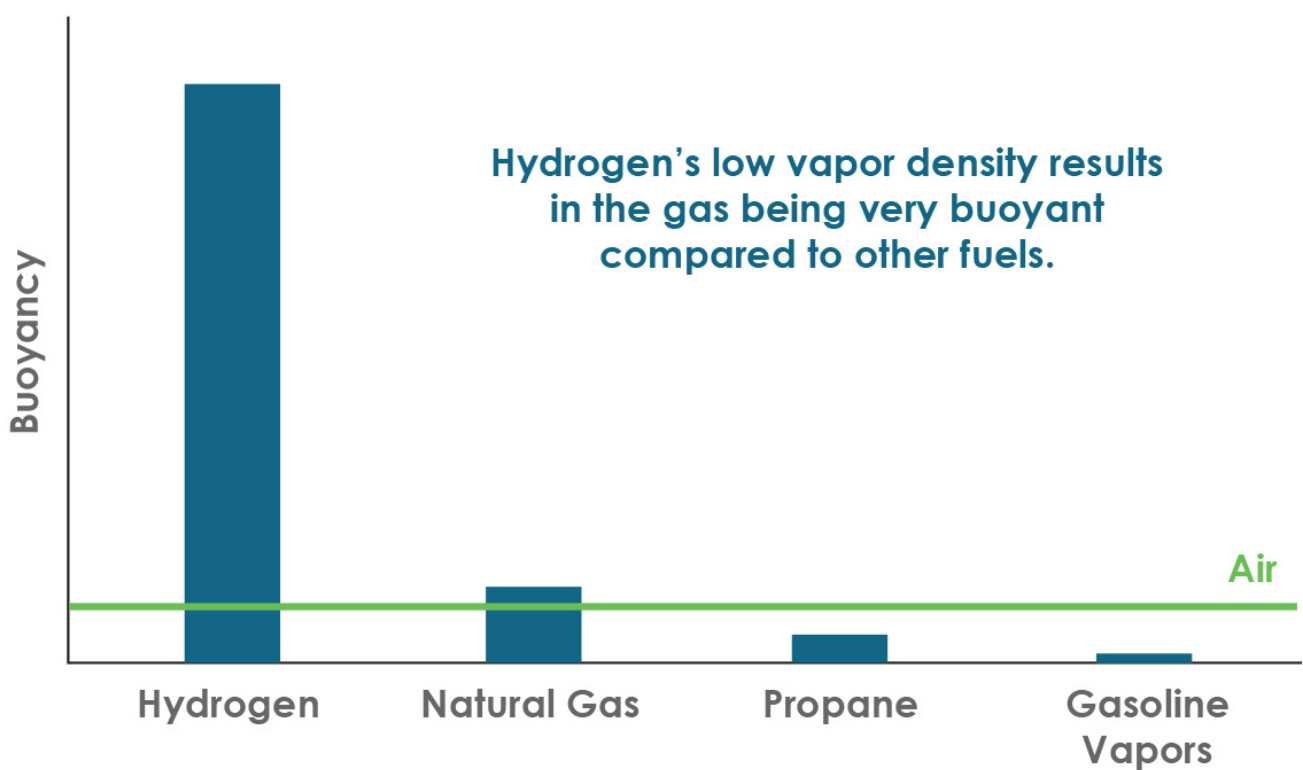
Placing Safety at the Center of Hydrogen



HYDROGEN'S BUOYANCY

Hydrogen's small molecule size and low vapor density (14 times lighter than air) make it unique compared to many other fuels. It has high buoyancy and diffusivity, and as such, leaking hydrogen will rise and disperse quickly in air. This phenomenon is very different from other common fuels, such as gasoline or propane. The vapors/gases from a release of these materials will pool near the ground.

Hydrogen's ability to rise and disperse quickly can provide a safety advantage in an outside environment. However, in confined spaces, hydrogen can accumulate and reach a flammable concentration near high points, ceilings, and roofs. Proper ventilation and the use of hydrogen detection sensors are essential to mitigate this hazard.



The Hydrogen Tools Portal has a best safety practices resource that provides additional information on this and other related topics pertaining to the safe handling and use of hydrogen (<https://h2tools.org/best-practices/best-practices-overview>).

Please contact us at chs@aiche.org if you have a suggestion for a future topic.



The Elemental is brought to you by the Center for Hydrogen Safety (CHS). CHS is a global, neutral, and nonprofit resource that supports and promotes the safe handling and use of hydrogen across industrial and consumer applications in the energy transition. The CHS facilitates access to hydrogen safety experts; develops comprehensive safety guidance, outreach and education materials and activities; and provides a forum to partner on worldwide technical solutions. See www.aiche.org/chs for more information.



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