Western Systems
Innovative Transportation Solutions

altergy®
Leading the Fuel Cell Revolution

HYDROGEN SAFETY

A Record of Safety

The U.S. currently produces and safely uses more than 9 million tons of hydrogen each year. Fuel cells continue to enter the market for diverse applications including specialty vehicles, combined heat and power (CHP), stationary, backup, and portable power. The number of fuel cell deployments continues to grow each year. To ensure the safe use of these technologies, companies consider the unique properties of hydrogen when designing structures where it will be used and stored. Components are built to meet strict manufacturer and published guidelines and undergo third-party testing for safety and structural integrity.

Hydrogen is Similar to Gasoline & Natural Gas

Hydrogen is no more or less dangerous than other flammable fuels, including gasoline and natural gas. In fact, some of hydrogen's differences actually provide safety benefits compared to gasoline or other fuels.

Hydrogen is Lighter Than Air and Diffuses Rapidly

Hydrogen has a rapid diffusivity (3.8 times faster than natural gas), which means that when released, it dilutes quickly into a non-flammable concentration. Hydrogen rises 2 times faster than helium and 6 times faster than natural gas at a speed of almost 45 mph (20m/s). Therefore, unless a roof, a poorly ventilated room or some other structure contains the rising gas, the laws of physics prevent hydrogen from lingering near a leak (or near people using hydrogen-fueled equipment). Simply stated, to become a fire hazard, hydrogen must first be confined – but as the lightest element in the universe, confining hydrogen is very difficult.

Proven Across Multiple Industries

For over 40 years, hydrogen has been used in vast quantities for industrial and commercial industries. During that time, it has been revolutionized by companies as they have developed an infrastructure to produce, store, transport and utilize hydrogen safely.

For More Information on Hydrogen Safety Visit Energy.gov

Sources:
https://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/doe_h2_safety.pdf
https://hydrogenus.org/general/factSheet_safety.pdf

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