

Liquid Hydrogen Test Facility

The Nexus of Clean™

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Applying hydrogen and liquid hydrogen (LH₂) in the move to a carbon-free economy requires a lot of new product development. As applications using liquid hydrogen grow, the testing and certifying equipment, components and processes in the low temperature gas are needed by the industry.

Chart Industries, a market leader in cryogenic and LH₂ solutions, understands many of the challenges in product testing and meeting certifications in the -423 °F temperatures that is liquid hydrogen. As part of the roadmap to use more LH₂, Chart opened a dedicated cryogenic hydrogen test facility, located in Minnesota.

The multimillion-dollar facility opened in June 2021 and demonstrates Chart's commitment to the clean energy future, moving forward with hydrogen. The test facility sits adjacent to Chart's Distribution and Storage 55-acre campus.



Test Facility – New Prague, MN



HLH₂ Onboard Fuel System

Tom Drube, Vice President - Engineering *"To ensure hydrogen is a viable safe alternative tomorrow, today Chart Industries is actively developing and testing hydrogen technology at our New Prague, MN test site."*

The site is equipped with the latest instrumentation technology to ensure the best testing practices and working with CGA and other industry code authorities to assist in their relevant guideline language. The LH₂ on the test site is of the highest purity – 99.999% "ultra-high pure". This is medical and fuel cell grade quality which allows testing products in those fields as well as others. All personnel involved in the testing have unique hydrogen test facility training as to the equipment and hazards of testing and validating new to the world of LH₂ systems.

Testing Programs Include:

- Hydrogen Behavior Testing
 - Release dispersion
 - Jet Fire radiation
- Component Testing
 - Valves
 - Pumps
 - Connections and Fittings

- System evaluations
 - Liquefaction
 - Liquid Pumping
 - Gas Supply systems
 - Metering

One notable onsite test - Ballard Power Systems and Chart successfully tested a fuel cell powered by liquid hydrogen. Ballard FCmove™-HD fuel cell was paired with a Chart liquid onboard hydrogen (LH₂) vehicle fuel system.

[Chart and Ballard Test Liquid Hydrogen Fuel Cell | Chart Industries](#)

Liquid hydrogen presents a series of unique challenges for its safe and economical production, storage, distribution and fueling. Combining Chart's proven track record and long history working with code authorities (i.e., CGA, NFPA, ASME, ANSI) results in a world class facility for reliable LH₂ testing for the next generation of clean.

For information on Chart Industries, visit www.chartindustries.com/hydrogen.

Product and Application Information: 1-952-243-8800 or 1-800-400-4683