HYDROGEN READY
THREAD SEALING SOLUTIONS

H_2ERE TO PERFORM UNDER PRESSURE

HIGH PRESSURE HYDROGEN LEAKS ELIMINATED *WITH HIGH PERFORMANCE, HIGH STRENGTH SEALANT*

SITUATION

A leading manufacturer of high pressure processing equipment was experiencing difficulties in finding a solution to seal the 1/4" and 1/2" AISI 316 stainless steel NPT fittings on a **hydrogen compressor** that needed to withstand pressures **up to 1,000 bar**. The previously evaluated sealants either failed their pressure requirements or required a long and complex curing process.

LOCTITE® SOLUTION

LOCTITE 638 High Strength Adhesive is a single-component, fast, room temperature curing adhesive that provides high shear strength.

Typically used to retain cylindrical components, such as bearings on shafts or in housings, **LOCTITE 638** is also ideal for thread sealing and/or threadlocking applications that operate in high pressures and other extreme environments. The anaerobic adhesive cures when confined in the absence of air between close-fitting metal surfaces and prevents loosening and leakage caused by shock and vibration. It cures on most metals without an activator or primer. The product offers high-temperature performance and good oil tolerance and tolerates minor surface contaminants.

- Hydrogen ready for use on metal fittings according to GASTEC QA AR 214 Class 8 – certifications are available in selected countries.
- NSF S5 Reg. No 123010
- DVGW Approval (EN 751-1): NG-5146AR0619

BENEFITS

Enhanced reliability due to elimination of all leaks in the field.

Increased productivity and process time savings due to fast adhesive curing.

Improved end-use equipment safety by eliminating risk of hydrogen leaks.

HIGH PRESSURE HYDROGEN THREAD SEALING FOR HYDROGEN FUELING STATION EQUIPMENT

SITUATION

A company specialising in innovative hydrogen fueling station technologies was experiencing challenges with a thread sealing application on one of their designs. They had been using PTFE tape on threaded connections **up to 1,000 bar**, but their assemblies were leaking. The challenge was to find a product which would prevent the hydrogen from leaking at the high pressure (1,000 bar) and extreme temperature conditions (-60°C up to 40°C).

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BENEFITS

- **Improved reliability/reduced warranty costs** due to elimination of leaks.
- **Downtime reduction** due to increase in equipment reliability.
- **Improved safety** by eliminating risk of dangerous hydrogen leaks.
- **Energy cost savings** due to prevention of leaks.