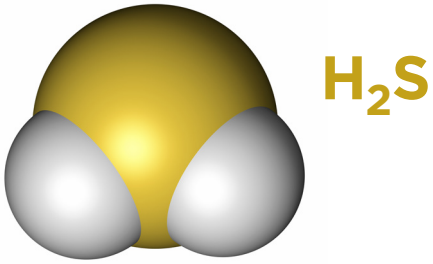
Chemraz® 526 - Proven Performance in High H_2S Sour Gas Environments

Reliable sealing in extreme sour service conditions

Hydrogen sulfide (H_2S) is commonly encountered in downhole and upstream oil & gas applications and presents a significant challenge to both metallic and non metallic components. Elevated H_2S concentrations can accelerate material degradation, compromise sealing performance, and increase the risk of rapid gas decompression (RGD).

Chemraz® 526 is engineered to deliver reliable sealing performance in harsh sour gas environments. To validate its robustness beyond standard qualification limits, Greene Tweed partnered with an independent laboratory (ARGEN) to evaluate Chemraz® 526 at **elevated H_2S concentrations well above industry test requirements.**

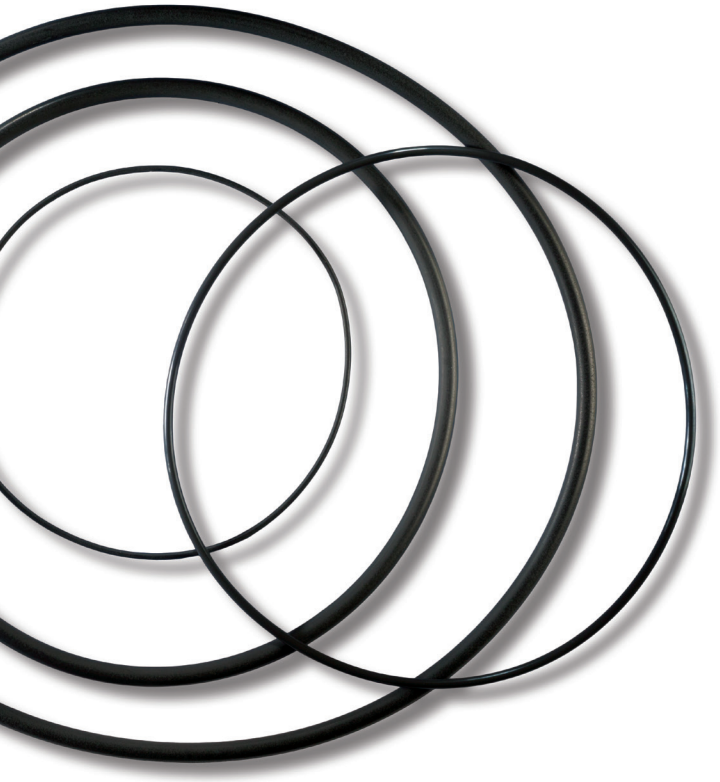


Testing Beyond Industry Standards

Greene Tweed routinely qualifies non metallic materials to recognized industry standards, including:

- **ISO 23936-2 / NORSOK M 710**
- **API 6A Annex F**

However, some applications exceed the H_2S concentrations defined in these standards. To address these more severe operating conditions, Chemraz® 526 was evaluated in a **30% H_2S gas mixture**, representing a significantly more aggressive sour environment than typically required.



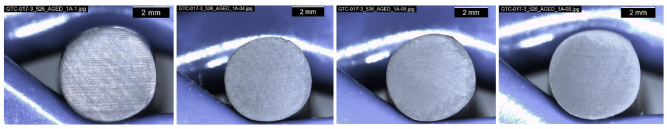
Fluid Aging – High H_2S Exposure

Fluid aging tests were conducted by ARGEN following the methodology of **ISO 23936-2 Annex A**, with targeted modifications to better represent extreme sour service.

Key Test Conditions

- **Temperature:** 180°C
- **Exposure Duration:** 21 days
- **Gas Phase Composition:**
  - 30% H_2S, 65% CH_4, 5% CO_2

Note: ISO 23936-2 typically specifies 10% H_2S in the gas phase. This testing tripled the H_2S concentration to assess material limits.



Fluid Aging Results

Chemraz® 526 met **all acceptance criteria** of ISO 23936-2 / NORSOK M 710, with **no failures observed** across all inspection intervals.

- Modulus at 50% strain – **Pass**
- Tensile strength at break – **Pass**
- Elongation at break – **Pass**
- Volume change – **Pass**
- Hardness (Shore A) – **Pass**

These results confirm that Chemraz® 526 maintains its mechanical and physical properties even after prolonged exposure to extreme sour gas conditions.

Rapid Gas Decompression (RGD) Performance in Sour Gas

RGD testing was performed in accordance with **ISO 23936-2 Annex B,** using a **high H_2S gas mixture** representative of severe sour service.

Test Gas Composition

- 30% H_2S, 5% CO_2, 65% CH_4

To better simulate real world operating conditions, specimens were evaluated in three conditions:

- **Unaged**
- **Soaked** (2 day fluid exposure)
- **Aged** (21 day fluid aging)

While ISO does not require pre aging prior to RGD testing, this additional step was included to replicate RGD events after prolonged sour gas exposure.

RGD Results

All Chemraz® 526 samples (unaged, soaked, and aged) **passed ISO 23936-2 Annex B acceptance criteria,** indicating no critical damage.

Proven Confidence for Severe Sour Service

The combined fluid aging and RGD results demonstrate that **Chemraz® 526 performs reliably in elevated H_2S environments,** even under conditions exceeding standard qualification requirements.

Key Benefits

- Validated performance at **30% H_2S,** well beyond industry norms
- Maintains mechanical integrity after prolonged sour gas exposure
- Excellent resistance to **rapid gas decompression** in high H_2S media
- Suitable for **critical upstream and downhole sealing applications**

Chemraz® 526 – Designed for the harshest sour gas challenges

For applications where standard testing is not enough, Chemraz® 526 delivers proven performance, reduced risk, and long term sealing reliability in extreme H_2S service.

For more information about Greene Tweed products please call your sales representative or visit gtweed.com

Greene Tweed
1684 South Broad Street, Lansdale, PA 19446 USA | Phone: (+1) (215) 256-9521
gtweed.com