

# Case Study: STRESS SAVER® GYLON® Style 3504 - Chemical

**INDUSTRY**

Chemical Processing

**CUSTOMER**

Chemical Manufacturing Facility

**BACKGROUND**

This chemical manufacturing facility utilizes a significant amount of lightweight dual laminate fiberglass reinforced piping (FRP) with PVC (polyvinyl chloride) lining in a variety of areas, specifically throughout the electrolysis process and prior to chlorine production. Due to the limited amount of available bolt load which is quite common with lightweight non-metallic piping, the majority of system flange and equipment connections have historically battled on-going leaks.

**CHALLENGES FACED**

PVC (polyvinyl chloride) lining often results in raised or flat face sealing surfaces that can be smooth or even serrated. Due to the lighter weight piping design utilized at this facility, and a limited amount of available gasket stress, selecting an engineered sealing solution would prove critical for long term, reliable performance. After additional application requirements such as media and pressure, it was critical that the gasket not only be able to seal at lower bolt loads, but also be durable enough to handle a variety of mechanical and chemical forces from both installation and operation. Molded ePTFE gaskets were historically used on this particular operating system, leaks at initial installation and after system start-up were obvious and abundant. While some of the leaks were attributed to creep relaxation, others were caused by splitting of gaskets due to the raised sealing surfaces and/or excessive bolt load.

**OPERATING CONDITIONS**

Size: 4" ID and 6" ID

Temperature: 160°F

Application: Non-metallic flange

Media: Brine (sodium chloride) & Chlorine (wet)

Pressure: 100psi

**SOLUTION AND BENEFITS**

Knowing that the application had a variety of complex sealing requirements, it was imperative to select a low load sealing solution with proven durability for the flange surface finishes that existed as well as a solution that would provide the necessary range of chemical compatibility. The Garlock STRESS SAVER® GYLON® Style 3504 was recommended, tested, and successfully qualified. The raised sealing ribs allowed for easy sealing under minimal bolt load, while the legacy GYLON® material properties proved to be second to none when it came to reduced creep relaxation properties, long term durability and reliability. Our patented, STRESS SAVER® GYLON® Style 3504, proved to be a game changer as a lightweight sealing solution. The product is also offered in sizes (1/2" through 12"), class (150# and 300#) and standards (ASME and DIN) to cover a wide variety of pipe related sealing needs.

For more information, please visit:

<http://www.garlock.com>

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Tel: 1-877-GARLOCK / 315.597.4811

Fax: 800.543.0598 / 315.597.3216

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