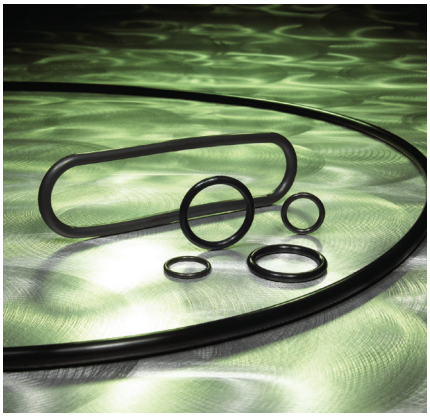
Chemraz® 526

Rapid Gas Decompression Resistant



Sealing Solutions

RGD, also known as explosive decompression, is a phenomenon that often occurs when high-pressure gas molecules migrate into an elastomer at a compressed state. When the pressure surrounding the elastomer is suddenly released, the compressed gas inside the elastomer tries to expand and exit the elastomer, thus causing RGD. Most elastomers experience severe blistering or cracking when the forces of these expanding gases overcome the strength of the surrounding material. However, Chemraz 526® offers superior RGD properties and the broadest chemical compatibility, such as, better resistance to sour gas, acids, caustics, hot water, and steam.

Greene Tweed's Chemraz® 526, a perfluoroelastomer, offers superior chemical compatibility and high-temperature performance, coupled with rapid gas decompression (RGD) (also known as explosive decompression) resistance, making it the ideal compound for hostile oilfield environments in downhole and surface equipment. Chemraz® 526 has a temperature range from -4°F to 482°F (-20°C to 250°C). With its outstanding RGD-resistant capabilities, Chemraz 526® is well suited in a range of applications, from drilling tools, wireline tools, and completion equipment to pumps and valves.

Chemraz 526® is available for use as o-rings, gaskets, and many other custom shapes.

Features and Benefits

- Successfully passed ISO 23936-2 and NORSOK M-710 test protocols
- Received a perfect score (0-0-0-0) for ISO RGD resistance - no cracks, holes, or blisters
- Provides excellent RGD resistance for equipment operating in high-temperature environments so parts maintain sealing properties and equipment life is extended
- Combines broad chemical resistance with RGD resistance while preventing leakage and equipment failure
- Reduces maintenance cost and mean time between failure

Applications

- Drilling tools
- Wireline tools
- Perforating equipment
- Completion equipment
- Valves
- Pumps

Typical Properties	
Physical Properties (ASTM Standard)	Typical
Color	Black
Specific Gravity (D792)	1.95
Hardness, Shore A, Points (D2240)	97
Tensile Strength, psi (MPa) (D1414)	2,780 (19.2)
Elongation @ Break, % (D1414)	90
Modulus @ 10% Elongation, psi (MPa) (D1414)	860 (5.9)
Tear Strength, psi [MPa] (D624)	260 [1.8]
Temperature Range, °F (°C)	-4 to 482 (-20 to 250)

Note: Unless otherwise noted, all tests performed on 214 o-rings.

Contact Us

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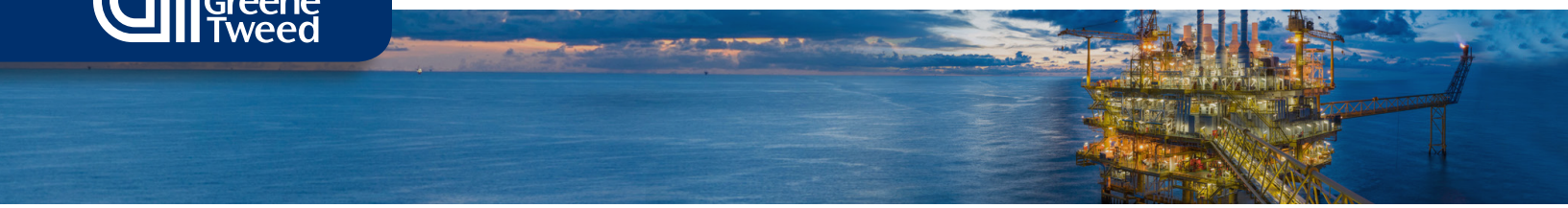

Chemraz® 526 has been successfully tested under the following conditions:

Test	Temperature °F (°C)	Pressure psi (MPa)	Media	Decompression Rate psi (MPa)	Cycles	Configuration
A	Ambient	800 (5.52)	CO_2	260 (1.79)/sec.	1	Open
B	160 (71)	2,400 (16.55)	CO_2/N_2	1,000 (6.89)/min.	3	Gland
C	160 (71)	2,400 (16.55)	CO_2/N_2	1,000 (6.89)/min.	5	Gland
D	150 (66)	2,000 (13.79)	CO_2/CH_4	1,000 (6.89)/min.	5	Gland
E	150 (66)	2,000 (13.79)	CO_2/N_2	1,200 (8.27)/min.	5	Open

Test Details

Test A

- Standard NACE TM0297-97
- Single-cycle, 24-hour pressure soak with near instantaneous (3-second) pressure drop
- Seals are placed in a pressure vessel and are unrestrained with pressure on all sides
- Results: -214 o-rings: Internal 1,1; External 1,1 (multiple samples)
- Results: -325 o-rings: Internal 1,1; External 1,1 (multiple samples)

Test B

- Test based on Shell DODEP 02.01B.03.02 requirements
- -214 o-rings
- 3 cycles, consisting of a 48-hour hold at elevated pressure and temperature. Each decompression is at a rate no less than 1000 psi/min. Entire fixture is maintained @ ambient pressure for a minimum of 1 hour between cycles
- Seals are constrained as a face seal with no back-up ring. Nominal squeeze and gland fill are 17% and 77%, respectively
- Fluid media is approximately 30% CO_2 (by volume), balance N_2
- Results: Internal: 1,1; External: 1,1* (two samples tested)

Test C

- Test based on Shell DODEP 02.01B.03.02 requirements
- -214 o-rings
- 5 cycles, consisting of a 48-hour hold at elevated pressure and temperature. Each decompression is at a rate no less than 1000 psi/min. Entire fixture is maintained @ ambient pressure for a minimum of 1 hour between cycles
- Seals are constrained as a face seal with no back-up ring Nominal squeeze and gland fill are 17% and 77%, respectively
- Fluid media is approximately 30% CO_2 (by volume), balance N_2
- Results: Internal: 1,1; External: 1,1,* (two samples tested)

Test D

- Test based on Shell DODEP 02.01B.03.02 requirements
- -214 o-rings
- 5 cycles, consisting of a 48-hour hold at elevated pressure and temperature. Each decompression is at a rate no less than 1000 psi/min. Entire fixture is maintained @ ambient pressure for a minimum of 1 hour between cycles
- Seals are constrained as a face seal with no back-up ring. Nominal squeeze and gland fill are 17% and 77% , respectively
- Fluid media is approximately 30% CO_2 (by volume), balance CH_4 (Methane)
- Results: Internal: 1,1; External: 1,2* (two samples tested)

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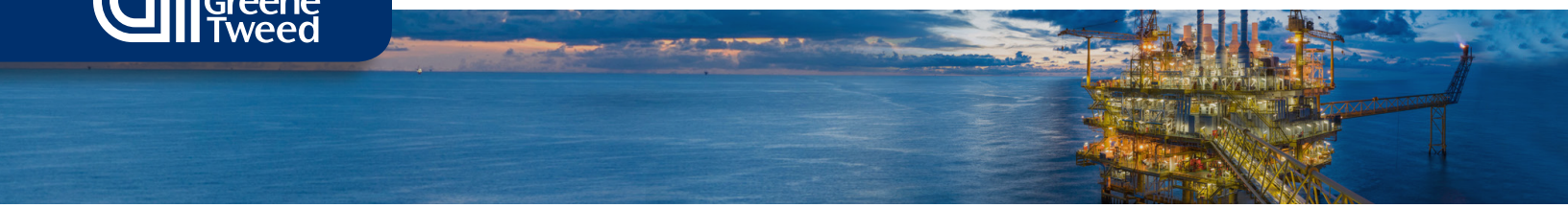

Test E

- Test based on Shell DODEP 02.01B.03.02 requirements
- -214 o-rings.
- 5 cycles, consisting of a 48-hour hold at elevated pressure and temperature. Each decompression is at a rate between 1000 - 1200 psi/min. Entire fixture is maintained @ ambient pressure for a minimum of 1 hour between cycles
- Fluid media is approximately 5% CO_2 (by volume), balance N_2
- Results: Internal: 1,1,1; External: 1,1,1* (three samples tested)

Damage Rating Scale	
External Visual Damage	Internal Visual Damage
1. No visible damage	1. No visible damage
2. Less than or equal to 2 pimples or cracks	2. Slight damage. One split/ blister per cut surface
3. 3-10 pimples or 1-2 blisters	3. Moderate damage. Less than 50% of surface cut
4. Less than 50% of surface subjected to blistering	4. Severe damage. More than 50% of surface cut
5. Considerable damage. More than 50% of surface covered with blisters or splits	

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