



# Chemraz® 541

## Sealing Solutions

Greene Tweed's Chemraz® 541 is a universal, high-strength black compound designed for demanding applications. It boasts excellent chemical and compression set resistance and operates at temperatures up to 446°F/230°C.

Thanks to its broad chemical compatibility, temperature range, and shape versatility, Chemraz® 541 is an ideal choice for demanding environments and processes. Chemraz® 541 maintains its properties when exposed to acids, acrylates, alcohols, aldehydes, amines, aromatics, esters, ethers, halogens, ketones, hot water, and steam.

We leverage compounding experience, manufacturing expertise, and engineering knowledge to ensure customers receive the optimal material and design for their application.

Greene Tweed's scientists and engineers are careful and methodical in the development of new compounds, undertaking numerous studies of processing variability to ensure our manufacturing team can deliver a consistent, quality product.

### Applications

- Mechanical seals
- Compressors
- Valves
- Mixers/agitators
- Centrifuge
- Controls/instrumentation
- Reactors
- Pumps

### Recommended Media Applications

- Acids
- Acrylates
- Alcohols
- Aldehydes
- Amines
- Esters
- Ethers
- Halogens
- Hot water & steam
- Olefinic oxides



### Features and Benefits

- Excellent chemical resistance and maximum temperature operation to 446°F/230°C
- Low-temperature capabilities 3°F/-16°C
- High strength and good compression set resistance for tough industrial applications
- Improved chemical resistance, especially in acids, amines, and steam
- Improved tensile strength and modulus should allow for better performance in dynamic applications and those requiring higher loads
- For Semiconductor applications, reduced outgassing for 14 nm and smaller, which helps to reduce the risk of pump down time and minimize process impact
- High elongation values ensure easy installation of o-rings
- Custom geometry availability upon request
- Global manufacturing capabilities
- Available as o-rings and slabs; other geometries upon request



# Chemraz® 541 Typical Properties

Universal Perfluoroelastomer (FFKM)

Compound No./Material Name: <b>Chemraz® 541</b>	Rubber Classification: <b>FFKM</b>	Service Temperature Range: <b>3°F to 446°F (-16°C to 230°C)</b>	Color: <b>Black</b>
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Description		Product Spec	Typical
<b>Original Properties</b>			
Specific Gravity		ASTM DS297	2
Hardness, Type A		points	76
Tensile Strength		psi	3009
Elongation		%	183
Modulus @ 100% Elongation		psi	1133
Modulus @ 50% Elongation		psi	410
<b>Compression Set</b>		<b>Sample Type</b>	<b>Result</b>
22 Hours @ 392°F (200°C), in Air, @ 25% deflection		O-Rings	23.3
70 Hours @ 400°F (204°C) in Air @ 25% deflection		O-Rings	26.7
22 Hours @ 392°F (200°C) in Air @ 25% deflection		Buttons	8.7
<b>Coefficient of Thermal Expansion (CTE)</b>		<b>Product Spec</b>	<b>Result</b>
-50 to -20°C		um/(m.°C)	96
20 to 120°C		um/(m.°C)	302
120 to 220°C		um/(m.°C)	349
220 to 320°C		um/(m.°C)	405
<b>Fluid Aging</b>			
70 hours @ 347°F (175°C) in Stauffer 7700	Hardness Change, Type M	Points	0.37
	Tensile Strength	%	5.83
	Elongation	%	6.23
	Volume Change	%	0
70 hours @ Room Temperature in ASTM Ref. Fuel B	Hardness Change, Type M	Points	0.2
	Tensile Strength	%	4.53
	Elongation	%	3.1
	Volume Change	%	0
70 hours @ 250°F (121°C) in Distilled Water	Hardness Change, Type M	Points	1.33
	Tensile Strength	%	-2.93
	Elongation	%	5.10
	Volume Change	%	1.33



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Description		Product Spec	Typical
<b>Fluid Aging</b>			
70 hours @ 250°F (121°C) in Steam	Hardness Change, Type M	Points	0.20
	Tensile Strength	%	-6.80
	Elongation	%	2.50
	Volume Change	%	1.00
168 hours @ 250°F (121°C) in Reagent Grade Sulfuric Acid	Hardness Change, Type M	Points	-3.5
	Tensile Strength	%	2.5
	Elongation	%	-0.20
	Volume Change	%	9.33
168 hours @ 302°F (150°C) in Diglycolamine	Hardness Change, Type M	Points	-4.0
	Tensile Strength	%	-1.0
	Elongation	%	31.0
	Volume Change	%	6.0
Outgassing @ 212°F (100°C)	Low Boilers C7 - C10	ppmw	0
	Medium Boilers >C10 - C20	ppmw	0
	High Boilers >C20	ppmw	0
	Sum >=C7	ppmw	0
Outgassing @ 392°F (200°C)	Low Boilers C7 - C10	ppmw	0.70
	Medium Boilers >C10 - C20	ppmw	6.20
	High Boilers >C20	ppmw	1.20
	Sum >=C7	ppmw	8.10

### Greene Tweed

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