

# Chemraz® 554/546 LT

## Low-Temperature Material Delivers Exceptional Performance in Extreme Environments



Chemraz® 554 LT seals

### Applications

O-rings and other sealing elements used in:

- Compressors
- Valves
- Pumps
- Mechanical seals

### Perfluoroelastomer Seals Expand Potential in Subzero Conditions

Chemraz® 554 LT (80 durometer) and Chemraz® 546 LT (90 durometer) are designed for use in valves, compressors, and pumps stored and operated in arctic environments. Subzero conditions place enormous stress on process equipment, and temperatures are typically beyond the capabilities of perfluoroelastomers. Chemraz® 554/546 LT overcome this limitation, maintaining seal integrity at high pressures and in temperatures as low as -40°F (-40°C).

Chemraz® 554/546 LT deliver the same exceptional chemical resistance, compression set, and thermal shock resistance as our other market-leading compounds. They also feature a comparable shrink rate, allowing for greater flexibility in tooling. A wide temperature range of -40°F to 445°F (-40°C to 230°C) make them suitable for a variety of industry applications.

### Features and Benefits

- Exceptional performance in extreme low temperatures enables use in increasingly harsh environments
- Excellent compression set and thermal shock resistance allow for a wide application range

### Contact Us

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## Chemraz® 554 LT Typical Properties

Physical Properties (ASTM Standard)	Typical
Color	Black
Specific Gravity (D297)	2.0
Hardness, Shore A, Button (D2240)	80
Hardness, Shore M (D2240)	83
<b>Mechanical (ASTM Standard)</b>	
Compression Set @ 25% Deflection, % of Original Deflection (D1414)	
– 70 Hours @ 400°F (205°C), in Air	15
– 70 Hours @ 450°F (230°C), in Air	32
Elongation, % (D1414)	210
Fluid Aging, Methanol, 168 Hours at Room Temperature, % Swell (D471)	2.0
Modulus @ 50% Elongation, psi (MPa) (D1414)	390 (3)
Modulus @ 100% Elongation, psi (MPa) (D1414)	800 (5.5)
Tear Strength, lb/in. (kN/m) (D624, Die C)	100 (18)
Tensile Strength @ Break, psi (MPa) (D1414)	1,850 (13)
<b>Thermal (ASTM Standard)</b>	
Coefficient of Linear Thermal Expansion, 10 <sup>-5</sup> , in./in.-°F (mm/mm-°C) (E831)	18 (33)
O-ring Leak Test (200 psi N <sub>2</sub> ), Average of 3 Tests <sup>1</sup> (GT method)	-48°F (-45°C)
Service Temperature Range, °F (°C)	-40°F to 445°F (-40°C to 230°C)
Tg (D3418)	-26°F (-32°C)
TR-10/50 (D1329)	-26°F (-32°C)

## Chemraz® 546 LT Typical Properties

Physical Properties (ASTM Standard)	Typical
Color	Black
Specific Gravity (D297)	2.0
Hardness, Shore A, Button (D2240)	90
Hardness, Shore M (D2240)	85
<b>Mechanical (ASTM Standard)</b>	
Compression Set @ 25% Deflection, % of Original Deflection (D1414)	
– 70 Hours @ 400°F (205°C), in Air	21
– 70 Hours @ 450°F (230°C), in Air	33
Elongation, % (D1414)	150
Fluid Aging, Methanol, 168 Hours at Room Temperature, % Swell (D471)	2.0
Modulus @ 50% Elongation, psi (MPa) (D1414)	550 (4)
Modulus @ 100% Elongation, psi (MPa) (D1414)	1,180 (8)
Tear Strength, lb/in. (kN/m) (D624, Die C)	110 (19)
Tensile Strength @ Break, psi (MPa) (D1414)	2,050 (14)
<b>Thermal (ASTM Standard)</b>	
Coefficient of Linear Thermal Expansion, 10 <sup>-5</sup> , in./in.-°F (mm/mm-°C) (E831)	15 (27)
O-ring Leak Test (200 psi N <sub>2</sub> ), Average of 3 Tests <sup>1</sup> (GT method)	-48°F (-45°C)
Service Temperature Range, °F (°C)	-40°F to 445°F (-40°C to 230°C)
Tg (D3418)	-22°F (-30°C)
TR-10/50 (D1329)	-22°F (-30°C)

Unless otherwise noted, all tests performed on AS 568- 214 o-rings.

1. O-ring Leak test (not an ASTM standard) uses three -214 o-rings compressed 19% and pressurized with 200 psi N<sub>2</sub> pressure. The reported value is the average temperature at which the three seals reach a leak rate of 2 sccm when the seals are cooled from room temperature at a rate of 0.3°C/minute.

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