

No. ORD5743

Low Temperature Performance

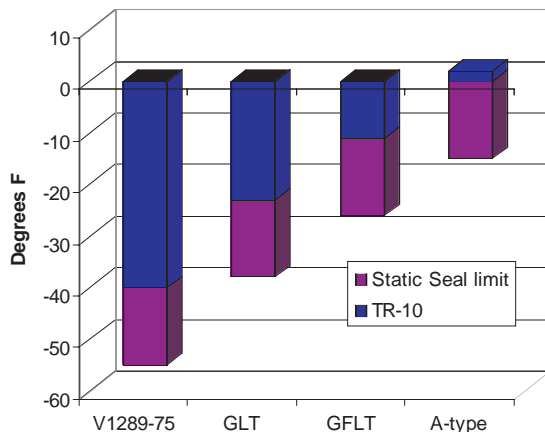
Parker's V1289-75 low temperature fluorocarbon compound offers the best low temperature sealing performance of any fluorocarbon rubber material available in the market.

Low temperature performance has long been the Achilles' heel of fluorocarbon elastomer technology. Standard fluorocarbon copolymer compounds can seal down to about -15°F (-26°C). Low temperature (GLT-type) fluorocarbon compounds offer low temperature flexibility down to -40°F (-40°C) but sacrifice resistance to alcohol-containing fuels. Low temperature / low swell fluorocarbons (GFLT-type) offer excellent resistance to alcohols, but only seal down to about -35°F (-37°C.) Parker's Fluorocarbon Fact Sheet has more information about these other grades of fluorocarbon rubber.

With a TR-10 of -40°F (-40°C), V1289-75 offers reliable dynamic sealing down to -40°F and static sealing down to -55°F (-48°C) in the most demanding seal applications.



FKM Low Temp Performance



Typical Applications Include:

- Low temperature hydraulics
- Jet fuel
- HTS turbine oils (MIL-L-23699)
- Automotive fuel systems
- Automotive engine oil and transmission fluids

V1289-75

-55°F to +400°F (-48°C to +200°C)

V1289-75 has significant advantages compared with other elastomer seal materials:

Compared to GLT fluorocarbon:

- Better low temperature rating than GLT fluorocarbon
- Lower volume swell than GLT fluorocarbon

Compared to GFLT fluorocarbon

- Better low temperature rating than GFLT fluorocarbon
- Better compression set than GFLT fluorocarbon

Compared to standard A-type fluorocarbon

- Better low temperature rating than standard FKM
- Lower volume swell than standard fluorocarbon

Compared to low temperature nitrile

- Better compression set than nitrile
- Lower swell than nitrile
- No dry-out shrinkage
- Better high temperature rating than nitrile

Compared to fluorosilicone

- Better wear resistance than fluorosilicone
- Better high temperature rating than fluorosilicone
- Better mechanical properties than fluorosilicone
- Lower volume swell than fluorosilicone

V1289-75 Typical Test Data

Date: June 20, 2005

PROPERTY	V1289-75 2-214 O-Ring Results
Original Physical Properties ASTM D1414, D2240, D297	
Shore A hardness	78
Tensile strength, min., psi	1497
Ultimate elongation, min., %	163
Specific Gravity	1.88
Low Temperature Retraction, D2137	
TR-10, °F	-40
Compression Set (22h @ 392°F) ASTM D395 Method B	
Loss of Original Deflection, %	17
Fluid Resistance ASTM Fuel B (70h @ 75°F) ASTM D471	
Hardness change, pts.	-3
Tensile strength change, max., %	-30
Ultimate elongation change, max., %	-12
Volume change, %	+5
Fluid Resistance ARM 300 (70h @ 392°F) ASTM D471	
Hardness change, pts.	-3
Tensile strength change, max., %	-16
Ultimate elongation change, max., %	-9
Volume change, %	+6
Compression set, % D395 Method B (modified)	16
Fluid Resistance Dexron III ATF (500h @ 302°F) ASTM D471	
Hardness change, pts.	-3
Tensile strength change, max., %	-18
Ultimate elongation change, max., %	-8
Volume change, %	+1.3
Heat Age (70h @ 482°F) ASTM D573	
Hardness change, pts.	+1
Tensile strength change, max., %	+11
Ultimate elongation change, max., %	+9



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Parker Hannifin Corporation
O-Ring Division
 2360 Palumbo Drive
 PO Box 11751
 Lexington, KY 40512-1751
 Phone: (859) 269-2351 Fax: (859) 335-5128

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www.parkerorings.com



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