NB194-90 Extrusion Resistance

Technical Bulletin

No. ORD 5750

NB194-90 Peroxide-Cured Nitrile Combines Excellent Compression Set Capability with Extrusion Resistance

Setting The Standard

Parker, recognized worldwide as the leader in elastomer development, has formulated a 90 durometer, peroxide-cured nitrile to specifically address the demanding environments of the Energy, Oil and Gas (EOG) industries. Parker NB194-90 provides excellent compression set resistance and extrusion resistance. NB194-90 also offers high temperature resistance as compared with other nitrile elastomers.

Applications

In high pressure oilfield applications, extrusion resistance is of the utmost importance. When space or assembly limitations prohibit the use of back-up rings, extrusion resistant o-rings can provide a good alternative sealing solution. Parker NB194-90 has exceptional extrusion resistance, low compression set and high temperature service capabilities.

Mechanics of Extrusion

Extrusion occurs when a gas or liquid at high pressure forces the seal material into the clearance gap between the mating surfaces. The larger the diametrical clearance, the more likely extrusion will occur. Elevated temperature and chemical compatibility may also influence potential for seal extrusion.

Compression Set Resistance

Compression Set is the amount by which a rubber specimen fails to return to its original shape after release of a compressive load.

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

NB194-90 Typical Test Data

Date: October 3, 2006

Property	NB194-90 2-214 O-Ring Results	
Original Physical Properties	**Test Method**	**Test Results**
Shore A Durometer Points	ASTM D2240	89
Tensile Strength, psi min.	ASTM D412	2758
Elongation % min.	ASTM D412	103
Modulus @ 100% Elongation, psi min.	ASTM D412	2565
Specific Gravity	ASTM D297	1.29
Compression Set (70 hours @ 257 F)		
Percent of Original Deflection, max	ASTM D395 Method B	18
Compression Set (70 hours @ 350 F)		
Percent of Original Deflection, max	ASTM D395 Method B	37
Fluid Immersion (IRM 903, 70 hours @ 257 F)		
Hardness Change, Shore A pts.	ASTM D471	-2
Tensile Strength Change, %		-56
Ultimate Elongation Change, %		-31
Volume Change, %		+10

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