

Parco

2269-70 HNBR Seals



Need Oil Resistant Seals?

2269-70 Meets Your Needs

1. Outstanding Resistance to Oils at High Temperatures

Exposure to oils can cause seals to swell significantly. High temperatures can also cause seals to undergo irreversible chemical changes, reducing resistance to compression set. Parco seals made from 70-durometer hydrogenated nitrile (HNBR) compound, 2269-70, offer outstanding resistance to oils at high temperatures. After testing 2269-70 in Industry Reference Material (IRM) 903 oil for 70 hours at 302°F, its volume swell was only 1 percent.

2. Excellent Resistance to Compression Set

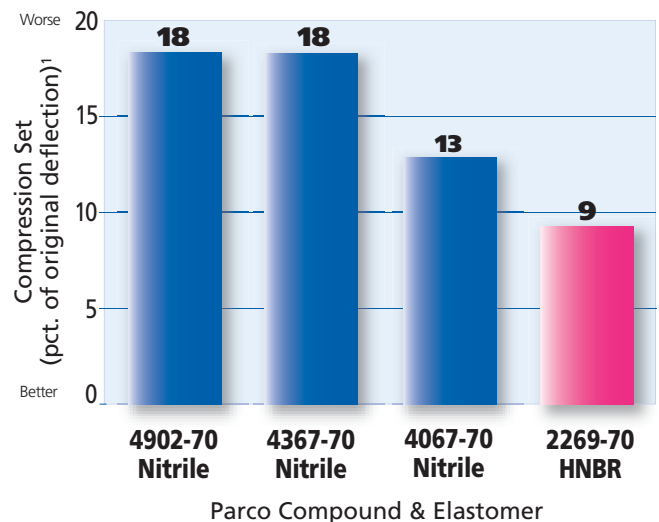
To perform properly, seals must resist taking a set from compression after being installed. When a seal takes a set, it no longer exerts force on the mating surfaces, resulting in leakage. A compound with low compression set, like 2269-70, better maintains its elastomeric properties and original thickness, preserving seal integrity. Seals made from Parco's 2269-70 compound provide excellent resistance to compression set (see Figure 1). After testing 2269-70 for 22 hours at 212°F, it had a compression set of only 9 percent.

HNBR Outperforms Conventional Nitrile

HNBR significantly outperforms conventional nitriles in resisting heat and sour crude. HNBR compounds have typical service ranges from -40 to +325°F and are recommended when upgrading from nitriles. HNBR compounds are also a less expensive alternative to fluorocarbon. Parco's most popular HNBR compound is 2269-70.

Fig. 1:

Compression Set of Typical Parco 70-Durometer Compounds



¹Compression set calculated after 22 hours at 100°C (212°F).
Source: Parco Test Reports.

Parco seals made from 2269-70 have excellent resistance to compression set. At 9 percent, 2269-70 outperforms other 70-durometer compounds.

Key Features

Parco's 2269-70 HNBR seals are an excellent choice for a variety of applications. Key features include the following:

- **Outstanding resistance to oils at high temperatures:**
Parco 2269-70 seals have volume swell of 1 percent after testing them in IRM 903 for 70 hours at 302°F.
- **Excellent resistance to compression set:**
Parco 2269-70 seals have a compression set of only 9 percent after 22 hours at 212°F.
- **Wide range of service temperatures:**
Parco 2269-70 seals are suitable for applications ranging from -30 to +325°F.

Chemical Resistance

USE WITH	DO NOT USE WITH
Corrosion Inhibitors (Amine) Sour Crude (H ₂ S-Containing) Ultraviolet Light	Automotive Brake Fluid Ethyl Acetate Gasoline

Typical Values for Compound 2269-70 70-durometer HNBR

Section of Spec.	Physical Property	Requirement ¹	Typical Value	ASTM ² Test Method
	Original Properties			
	Hardness, Shore A	70 ± 5	68	D2240
	Tensile strength, MPa (psi), min.	14(2031)	19(2756)	D412
	Ultimate elongation, pct., min.	250	326	D412
A25	Heat Aging 70 hours at 125°C (257°F)			D865
	Hardness change, pts., Shore A	0 to 15	3	
	Tensile strength change, pct., max.	-25	1	
	Ultimate elongation change, pct., max.	-50	-11	
B14	Compression Set, Solid pct. of original deflection, max. 22 hours at 100°C (212°F)	25	9	D395 Method B
EO16	Fluid Aging, IRM³ 901 Oil 70 hours at 150°C (302°F)			D471
	Hardness change, pts., Shore A	0 to 10	10	
	Tensile strength change, pct., max.	-20	4	
	Ultimate elongation change, pct., max.	-40	-20	
	Volume change, pct.	-15 to 5	-11	
EO36	Fluid Aging, IRM 903 Oil 70 hours at 150°C (302°F)			D471
	Hardness change, pts., Shore A	±10	0	
	Tensile strength change, pct., max.	-35	-5	
	Ultimate elongation change, pct., max.	-35	-13	
	Volume change, pct.	0 to 25	1	
Z1	Low Temperature Resistance TR-10, °C (°F)	Report	-23(-12)	D1329

¹Compound 2269-70 meets the requirements shown above for ASTM D2000 M3CH714 A25 B14 EO16 EO36 Z1. ²ASTM is the acronym for the American Society for Testing and Materials. ³IRM is the acronym for Industry Reference Material.

Source: Parco Test Report 8621.

⚠ This brochure is intended as a guideline and reference. Appropriate testing and validation by users having technical expertise is necessary for proper use of Parco products.

Parco

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