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## O-Ring Compound HNBR90 Data Sheet

Material: Hydrogenated Nitrile, HNBR  
90 Durometer, Black

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### **General Information:**

Also known as Highly Saturated Nitrile (HSN), it is a synthetic polymer that is obtained by saturating the double bonds in nitrile-butadiene segments with hydrogen. HNBR has superior heat, ozone, chemical resistance and mechanical characteristics over standard Nitrile.

**Cure System:** *Peroxide-cured*

**Temperature Range:** -40°C (-40°F) to 150°C (302°F)

### **Attributes:**

- Color: Black
- 90±5 Shore A durometer
- Shelf-life: 15 years

### Performs Well In:

- Petroleum based oils and fuels
- Aliphatic hydrocarbons
- Vegetable oils
- Silicone oils and greases
- Ethylene glycol
- Dilute acids, bases and salt solutions to moderate temperatures
- Water and steam to 150 °C (300 °F)

### Doesn't Perform Well In:

- Chlorinated hydrocarbons
- Ketones
- Ethers
- Esters
- Strong acids

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## TEST REPORT FOR COMPOUND HNBR90

MATERIAL: HYDROGENATED NITRILE

DUROMETER: 90

COLOR: BLACK

ASTM\* D2000 M4DH910 A26 B36 EO16 EO36 F17 Z

SECTION OF SPEC.	PROPERTIES	REQUIREMENTS	RESULTS	ASTM TEST METHOD
	<b>ORIGINAL PHYSICAL PROPERTIES</b>			
	Hardness, Shore A	90±5	87	D2240-15
	Tensile Strength, min, Mpa	10	21.6	D412-16
	Elongation, min, percent	100	229	D412-16
	Specific Gravity (g/cm <sup>3</sup> )		1.28	D297-15
A26	<b>HEAT RESISTANCE</b>			D573-10
	<b>70 hours at 150°C (302°F), percent</b>			
	Hardness Change, points	+10	+6	
	Tensile Strength Change, percent	-15	+17	
B36	<b>COMPRESSION SET, METHOD B</b>			D395-18
	22 hours at 150°C (302°F), max, percent	35	17	
EO16	<b>IRM901 OIL RESISTANCE</b>			D471-16
	<b>70 hours at 150°C (302°F)</b>			
	Hardness Change, points	-5 to +10	+4	
	Tensile Change, max, percent	-20	+11	
	Elongation Change, max, percent	-30	+2	
EO36	<b>IRM903 OIL RESISTANCE</b>			D471-16
	<b>70 hours at 150°C (302°F)</b>			
	Hardness Change, points	-15	-3	
	Tensile Change, max, percent	-40	-4	
	Elongation Change, max, percent	-30	-17	
F17	<b>LOW-TEMPERATURE RESISTANCE</b>			D2137-18
	nonbrittle after 3 min at -40°C	pass	pass	
Z	<b>TR-10, Retraction at Lower Temperature Resistance</b>			D1329-16
	51 mm die, 50% elongation, °C		-21.9	

\*American Society for Testing and Materials