
O-Ring Compound N90 Data Sheet

Material: Butadiene Acrylonitrile Copolymer
90 Durometer, Black

General Information:

Nitrile, Buna, or NBR is one of the most common sealing elastomers due to its resistance to petroleum-based fuels and lubricants. Nitrile elastomers are copolymers of acrylonitrile and butadiene.

Cure System: *Sulfur-cured* compounds show better low-temperature properties, however are more prone to hardening with high temperatures.

Temperature Range: -40°C (-40°F) to 100°C (212°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
- Water to below 100°C (212°F)

Doesn't Perform Well In:

- Aromatic hydrocarbons
- Automotive brake fluid
- Chlorinated hydrocarbons
- Ketones
- Ethers
- Esters
- Phosphate ester hydraulic fluids
- Strong acids
- Ozone/weathering/sunlight

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TEST REPORT: COMPOUND N90

MATERIAL: BUTADIENE ACRYLONITRILE COPOLYMER

DUROMETER: 90

COLOR: BLACK

ASTM* D2000 M7BG910 B14 EO14 EO34 EF11 EF21 EA14 Z1

SECTION OF SPEC.	PROPERTIES	REQUIREMENTS	RESULTS	ASTM TEST METHOD
	ORIGINAL PHYSICAL PROPERTIES			
	Hardness, Shore A	90±5	87	D2240-05
	Tensile Strength, psi (MPa)	1450 (min.)	2499 (17.23)	D412-06a
	Elongation, percent	100 (min.)	133	D412-06a
	Modulus at 100%, psi (MPa)		1990 (13.72)	D412-06a
	Specific Gravity (g/cm ³)		1.381	
B14	COMPRESSION SET			D395-04, Method B
	22 hours at 100°C (212°F), percent	25 (button) (max.)	7.8	
EA14	WATER RESISTANCE			D471-06
	70 hours at 100°C (212°F)			
	Hardness Change, points	±10	-2	
	Tensile Strength Change, percent		+5	
	Elongation Change, percent		-11	
	Volume Change, percent	±15	+3.3	
EF11	FUEL A RESISTANCE			D471-06
	70 hours at 23°C (73.4°F)			
	Hardness Change, points	±10	-3	
	Tensile Strength Change, percent	-25 (max.)	0	
	Elongation Change, percent	-25 (max.)	-5	
	Volume Change, percent	-5 to +10	+1.8	
EF21	FUEL B RESISTANCE			D471-06
	70 hours at 23°C (73.4°F)			
	Hardness Change, points	0 to -30	-14	
	Tensile Strength Change, percent	-60 (max.)	-28	
	Elongation Change, percent	-60 (max.)	-30	
	Volume Change, percent	0 to +40	+18.7	
EO14	NO. 1 OIL			D471-06
	70 hours at 100°C (212°F)			
	Hardness Change, points	-5 to +5	+3	
	Tensile Strength Change, percent	-25 (max.)	-2	
	Elongation Change, percent	-45 (max.)	-17	
	Volume Change, percent	-10 to +5	-2.8	
EO34	NO. 3 OIL			D471-06
	70 hours at 100°C (212°F)			
	Hardness Change, points	-10 to +5	-5	
	Tensile Strength Change, percent	-45 (max.)	-3	
	Elongation Change, percent	-45 (max.)	-16	
	Volume Change, percent	0 to +25	+6.0	

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