

Material Properties

General Purpose NBR (N90, Nitrile 90 Duro, Buna)

Material code: 102

Nitrile is the most commonly used rubber material. This is due to Nitrile's compatibility with most environments as well as its relative cost compared to other rubber materials. It is a general purpose copolymer of butadiene and acrylonitrile. This compound has relatively high acrylo content, making it exceptionally resistant to petroleum base oils and hydrocarbon fuels. Nitrile has good mechanical properties when compared with other elastomers and high wear resistance. Unless they are specially compounded, Nitrile is not resistant to weathering, sunlight and ozone. Nitrile 90 durometer is recommended for higher pressures.

Physical Properties	ASTM Method	Typical Values
Specific Gravity	D297	1.24 gr/cm 3
Water Absorption (24 hrs. @ 74°F)	D570	0.01 %
Color	N/A	Black
Mechanical Properties		
Tensile Strength	D412	2322 psi
Elongation	D412	
• At 410 psi		100%
• At Break		141%
Compression Set	D395	
• 22 hrs. at 212°F		5%
• 300 hrs. at 212°F		28%
Hardness	Shore A	90
Shear Modulus, G		1503 psi
Youngs Modulus, E		4730 psi
Aging Resistance		
Heat Resistance (70 hrs. at 212°F)	D573	
Hardness change	Shore A	+1
Tensile Strength change		+3%
Elongation Change		-25%
Water Immersion Resistance		
Hardness Change	Shore A	-5
Elongation Change		+8%
ASTM Fuel A-EF11 Resistance (70 hrs. at 74°F)		
Hardness Change	D471	
Hardness Change	Shore A	-2
Tensile Strength Change		+2 %
Elongation Change		+1 %
Volume Change		+1 %
ASTM IRM 901 #1 Oil-E014 Resistance (70 hours at 212°F)		
Hardness Change	D471	
Hardness Change	Shore A	0
Tensile Strength Change		+6 %
Elongation Change		-14 %



Note: *Property values should be interpreted as typical rather than minimum value.* All technical information and recommendations are presented in good faith, and based upon laboratory and real-world tests believe to be reliable and practical. However, K.C. Seals, Inc. cannot guarantee the accuracy or completeness of this information, and it is the customers' responsibility to determine product suitability to any given application.



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