

Material Properties

HNBR 80 (HSN80, HNBR 80 Duro)

Material code: 121

Hydrogenated Nitrile Butadiene Rubber HNBR, also known as Highly Saturated Nitrile HSN, is special class of nitrile rubber NBR that has been hydrogenated to increase saturation of the butadiene segment of the carbon polymer backbone. Subsequent improvements to the material properties, over that of a nitrile rubber NBR, include greater thermal stability, broader chemical resistance, and greater tensile strength.

Physical Properties	ASTM Method	Typical Values
Specific Gravity	D297	1.18 gr/cm 3
Water Absorption (24 hrs. @ 74°F)	D570	0.01 %
Color	N/A	Black
Mechanical Properties		
Tensile Strength	D412	3180 psi
Elongation	D412	
• At 725 psi		100%
• At break		290%
Compression Set	D395	
• 22 hrs. at 302°F		16%
• 70 hrs. at 212°F		31%
Hardness	Shore A	80
Shear Modulus, G		500 psi
Youngs Modulus, E		1489 psi
Aging Resistance		
Heat Resistance (70 hrs. at 212°F)	D573	
Hardness change	Shore A	+7
Tensile Strength change		+4%
Elongation Change		-27%
ASTM #1 Oil Resistance (70 hrs. at 302°F)		
Hardness Change	Shore A	+2
Tensile Strength Change		+5%
Elongation Change		-16%
Volume Change		-2%
ASTM #3 Oil Resistance (70 hrs. at 302°F)		
Hardness Change	Shore A	-9
Tensile Strength Change		-7%
Elongation Change		-7%
Volume Change		+14%
Thermal Properties		
Brittle Point Temperature	D764	-45°F
Glass Transition Temperature (Tg)	D3418	-25°F
Continuous Service Temperature		302°F



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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