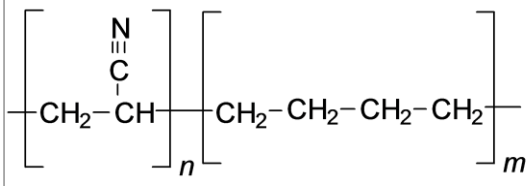
systemseals

MATERIAL SPECIFICATION SHEET

MN325

Highly Saturated Nitrile Butadiene Elastomer (HNBR)



SPECIFICATIONS

Property	Method	Requirement	Result
Physical Properties – DH910			
Hardness	D2240	95 ± 5	93
Tensile Strength	D412 Die C	10 min.	19.7 MPa
Elongation	D412 Die C	100 min.	206 %
Specific Gravity	D1817	-	1.30
Heat Resistance – (150°C x 70 hrs.) –DH Basic Requirement	D573		
Hardness Change		±15	+3 points
Tensile Strength Change		±30	+6 %
Elongation Change		-50 max	-41 %
Volume Change		-	-3 %
Compression Set – (150°C x 22 hrs.) – B36	D395B	50 max.	49 %
ASTM No. 1 Oil – (150°C x 70 hrs.) – EO16	D471		
Hardness Change		-5 to +10	+1 points
Tensile Strength Change		-20 max.	+5 %
Elongation Change		-30 max.	-18 %
Volume Change		±5	-4 %
IRM 903 Oil – (150°C x 70 hrs.) – EO36	D471		
Hardness Change		-15 max.	-5 points
Tensile Strength Change		-30 max.	-3 %
Elongation Change		-30 max.	-10 %
Volume Change		+25 max.	+8 %
Operating Temperature			-25 to 150° C -13 to 302° F

DESCRIPTION

MN325 is a HNBR material with hardness 95±5 Shore A. The first commercialization of hydrogenated nitrile elastomer HNBR copolymer was in 1984, almost 50 years after the commercialization of NBR. To obtain HNBR, NBR is hydrogenated during the polymer synthesis process. Hydrogen is selectively added to the unsaturated carbon-carbon double bonds, -C=C-, of butadiene in the NBR polymer to form saturated carbon-carbon single bonds -C-C-. Thus HNBR emphasizes two essential features: nitrile, -C=N, functional groups as in NBR and a hydrogenated backbone. The nitrile polar group is responsible for HNBR's excellent oil and fuel resistance. The hydrogenated backbone is responsible for HNBR's significantly increased high temperature properties compared to NBR. HNBR has very good ozone and weather resistance thanks to its saturated backbone.