

Nitrile Rubber (NBR, Acrylonitrile-Butadiene Rubber)

Category : Polymer , Thermoset , Rubber or Thermoset Elastomer (TSE)

Material Notes:

Nitrile Rubbers are copolymers of butadiene and acrylonitrile. The term has also been applied to copolymers of other dienes and/or nitriles. Acrylonitrile content may range from 18-50%. Increasing acrylonitrile content leads to higher hardness, strength, abrasion resistance, heat resistance, and oil/fuel resistance and lower resilience and low temperature flexibility. NBR is generally damaged by ozone, chlorinated solvents, ketones, aldehydes, esters, and nitrogen-containing solvents.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Nitrile-Rubber-NBR-Acrylonitrile-Butadiene-Rubber.php

Physical Properties	Metric	English	Comments
Density	1.00 g/cc	0.0361 lb/in ³	Base Elastomer
	1.15 - 1.35 g/cc	0.0415 - 0.0488 lb/in ³	Compounded

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	30 - 95	30 - 95	Depends on compounding
Tensile Strength, Ultimate	6.89 - 24.1 MPa	1000 - 3500 psi	Reinforced
	0.896 MPa	130 psi	
	@Temperature 204 °C	@Temperature 400 °F	
Elongation at Break	4.83 MPa	700 psi	
	@Temperature 121 °C	@Temperature 250 °F	
100% Modulus	400 - 600 %	400 - 600 %	Reinforced
	20 %	20 %	
	@Temperature 204 °C	@Temperature 400 °F	
Compression Set	120 %	120 %	
	@Temperature 121 °C	@Temperature 250 °F	
100% Modulus	0.00300 GPa	0.435 ksi	200 mm/min
Compression Set	5.0 %	5.0 %	

Thermal Properties	Metric	English	Comments
CTE, linear	702 µm/m-°C	390 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Maximum Service Temperature, Air	120 °C	248 °F	

Thermal Properties	Metric	English	Comments
Brittleness Temperature	-51.1 °C	-60.0 °F	
Glass Transition Temp, Tg	-38.0 °C	-36.4 °F	Typical of rubber with 18% ACN content
	-2.00 °C	28.4 °F	Typical of rubber with 50% ACN content

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