

Natural Rubber, Vulcanized (NR, IR, Polyisoprene)

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

Material Notes:

Natural rubber is polyisoprene. Chemical and environmental resistance and mechanical properties are improved through crosslinking (vulcanizing), usually through treatment with sulfur. Natural rubber usually withstands polar organic solvents (alcohols, ketones, aldehydes), organic acids, and mild chemicals. Its is adversely affected by most hydrocarbons, oil/grease/fat, strong acid, and ozone.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Natural-Rubber-Vulcanized-NR-IR-Polyisoprene.php

Physical Properties	Metric	English	Comments
Density	0.950 g/cc	0.0343 lb/in ³	Uncompounded

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	30 - 100	30 - 100	Depends on compounding
Hardness, Shore D	30 - 45	30 - 45	Depends on compounding
Tensile Strength, Ultimate	28.0 MPa	4060 psi	Compounded Tire
Elongation at Break	100 - 800 %	100 - 800 %	
100% Modulus	0.00150 GPa	0.218 ksi	
Shear Modulus	0.000500 GPa	0.0725 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	225 $\mu\text{m/m-}^{\circ}\text{C}$	125 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Specific Heat Capacity	0.440 J/g- $^{\circ}\text{C}$	0.105 BTU/lb- $^{\circ}\text{F}$	
Thermal Conductivity	0.150 W/m-K	1.04 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Maximum Service Temperature, Air	80.0 $^{\circ}\text{C}$	176 $^{\circ}\text{F}$	
Minimum Service Temperature, Air	-55.0 $^{\circ}\text{C}$	-67.0 $^{\circ}\text{F}$	

Optical Properties	Metric	English	Comments
Refractive Index	1.526	1.526	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	

Electrical Properties <i>Dielectric Constant</i>	Metric	English	Comments
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	50.0 kV/mm	1270 kV/in	Step by step
Dissipation Factor	0.0020	0.0020	
	@Frequency 60.0 - 1000 Hz	@Frequency 60.0 - 1000 Hz	
	0.030	0.030	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

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