Rubber Material Selection Guide
NR or Natural Rubber
Polyisoprene

Abbreviation	NR
ASTM D-2000 Classification	AA
Chemical Definition	Polyisoprene
Compound Number Category	10000 Series

Physical & Mechanical Properties

Durometer or Hardness Range	30 – 95 Shore A
Tensile Strength Range	500 – 3,500 PSI
Elongation (Range %)	300 % – 900 %
Abrasion Resistance	Good to Excellent
Adhesion to Metal	Excellent
Adhesion to Rigid Materials	Excellent
Compression Set	Excellent
Flex Cracking Resistance	Excellent
Impact Resistance	Good to Excellent
Resilience / Rebound	Excellent
Tear Resistance	Good to Excellent
Vibration Dampening	Good to Excellent

Chemical Resistance

Acids, Dilute	Fair to Excellent
Acids, Concentrated	Poor to Good
Acids, Organic (Dilute)	Fair to Good
Acids, Organic (Concentrated)	Good
Acids, Inorganic	Good

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Chemical Resistance

Alcohol's	Good to Excellent
Aldehydes	Good
Alkalies, Dilute	Fair to Excellent
Alkalies, Concentrated	Fair to Good
Amines	Poor to Fair
Animal & Vegetable Oils	Poor to Good
Brake Fluids, Non-Petroleum Based	Good
Diester Oils	Poor
Esters, Alkyl Phosphate	Poor
Esters, Aryl Phosphate	Poor
Ethers	Poor
Fuel, Aliphatic Hydrocarbon	Poor
Fuel, Aromatic Hydrocarbon	Poor
Fuel, Extended (Oxygenated)	Poor
Halogenated Solvents	Poor
Hydrocarbon, Halogenated	Poor
Ketones	Fair to Good
Lacquer Solvents	Poor
LP Gases & Fuel Oils	Poor
Mineral Oils	Poor
Oil Resistance	Poor
Petroleum Aromatic	Poor
Petroleum Non-Aromatic	Poor
Refrigerant Ammonia	Good
Refrigerant Halofluorocarbons	R-12, R-13
Refrigerant Halofluorocarbons w/ Oil	Poor
Silicone Oil	Good
Solvent Resistance	Poor

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Thermal Properties

■ Low Temperature Range	- 20º F to - 70º F
■ Minimum for Continuous Use (Static)	- 60º F
■ Brittle Point	- 80º F
■ High Temperature Range	+ 180º F to + 220º F
■ Maximum for Continuous Use (Static)	+ 180º F

Environmental Performance

■ Colorability	Poor
■ Flame Resistance	Fair to Good
■ Gas Permeability	Fair to Good
■ Odor	Good to Excellent
■ Ozone Resistance	Poor
■ Oxidation Resistance	Good
■ Radiation Resistance	Fair to Good
■ Steam Resistance	Good
■ Sunlight Resistance	Poor to Fair
■ Taste Retention	Fair to Good
■ Weather Resistance	Poor to Fair
■ Water Resistance	Excellent

For assistance in identifying the appropriate polymer or material, or to develop and formulate a polyacrylate / acrylic rubber compound to meet your specific application and performance requirements, please contact Robinson Rubber Products at e-mail: sales@robinsonrubber.com or phone: +1-763-535-6737.