

NR - Natural Polyisoprene Rubber, Natural Rubber

Hardness Range 30 to 95 Durometer Shore A

Temperature Range - 55° C to + 80° C

Advantages in performance...

- for abrasion resistance, adhesion to metal & rigid materials, compression set, flex cracking resistance, impact resistance, resilience & rebound, tear resistance, and vibration dampening.
- in dilute acids, alcohol's, and dilute alkalis.
- for odor and water resistance.

Limitations in performance...

- in certain concentrated acids, amines, animal & vegetable oils, diester oils, alkyl phosphate esters, aryl phosphate esters, ethers, aliphatic hydrocarbon fuel, aromatic hydrocarbon fuel, extended or oxygenated fuel, halogenated solvents, halogenated hydrocarbons, lacquer solvents, LP gases & fuel oils, mineral oils, aromatic & non-aromatic petroleum products, and refrigerant halofluorocarbons with oil.
- for coloring capabilities, ozone resistance, sunlight resistance, and weather resistance.

Rubber Material Selection Guide NR or Natural Rubber Polyisoprene

- Abbreviation NR
- ASTM D-2000 Classification AA
- Chemical Definition Polyisoprene

◆ 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 |

.Rubber Material Selection Guide NR or Natural Rubber Polyisoprene**◆ 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 |

Rubber Material Selection Guide NR or Natural Rubber Polyisoprene

◆ 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 NR or natural rubber compound to meet your specific application and performance requirements, please contact ILGA S.R.L at e-mail: ilga@ilgagomma.com or phone: +39 0456336521 / 0456336514.

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