

## **NBR - Acrylonitrile Butadiene, Nitrile Rubber, Buna N Rubber**

**Hardness Range** 20 to 95 Durometer Shore A

**Temperature Range** - 45° C to + 110° C

**Advantages** in performance...

- for abrasion resistance, adhesion to metal & rigid materials, compression set, and tear resistance.
- in animal & vegetable oils, aliphatic hydrocarbon fuels, LP gases & fuel oils, mineral oils, non-aromatic petroleum, and certain solvents.
- for coloring capability, gas permeability, and water resistance.

**Limitations** in performance...

- in concentrated acids, concentrated organic acids, aldehydes, concentrated alkalis, amines, brake fluids, alkyl phosphate esters, aryl phosphate esters, ethers, halogenated solvents, halogenated hydrocarbons, and ketones.
- for flame resistance and sunlight resistance.

## ***Rubber Material Selection Guide NBR / Nitrile or Buna N Acrylonitrile Butadiene***

- Abbreviation NBR
- ASTM D-2000 Classification BF, BG, BK
- Chemical Definition Acrylonitrile Butadiene

### **◆ Physical & Mechanical Properties**

• Durometer or Hardness Range	20 – 95 Shore A
• Tensile Strength Range	200 – 3,500 PSI
• Elongation (Range %)	350 % – 650 %
• Abrasion Resistance	Good to Excellent
• Adhesion to Metal	Excellent
• Adhesion to Rigid Materials	Good to Excellent
• Compression Set	Good to Excellent
• Flex Cracking Resistance	Fair to Good
• Impact Resistance	Fair to Good
• Resilience / Rebound	Good
• Tear Resistance	Good to Excellent
• Vibration Dampening	Fair to Good

**◆ Chemical Resistance**

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

***Rubber Material Selection Guide NBR / Nitrile or Buna N Acrylonitrile Butadiene*****◆ Chemical Resistance**

• Alcohol's	Fair to Good
• Aldehydes	Poor to Fair
• Alkalies, Dilute	Good
• Alkalies, Concentrated	Poor to Good
• Amines	Poor
• Animal & Vegetable Oils	Good to Excellent
• Brake Fluids, Non-Petroleum Based	Poor
• Diester Oils	Fair to Good
• Esters, Alkyl Phosphate	Poor
• Esters, Aryl Phosphate	Poor to Fair
• Ethers	Poor
• Fuel, Aliphatic Hydrocarbon	Good to Excellent
• Fuel, Aromatic Hydrocarbon	Fair to Good
• Fuel, Extended (Oxygenated)	Fair to Good
• Halogenated Solvents	Poor
• Hydrocarbon, Halogenated	Poor to Fair
• Ketones	Poor
• Lacquer Solvents	Fair
• LP Gases & Fuel Oils	Excellent
• Mineral Oils	Excellent
• Oil Resistance	Good to Excellent
• Petroleum Aromatic	Good
• Petroleum Non-Aromatic	Excellent
• Refrigerant Ammonia	Good
• Refrigerant Halofluorocarbons	R-11, R-12, R-13
• Refrigerant Halofluorocarbons w/ Oil	R-11, R-12
• Silicone Oil	Good
• Solvent Resistance	Good to Excellent

## **Rubber Material Selection Guide NBR / Nitrile or Buna N Acrylonitrile Butadiene**

### ◆ **Environmental Performance**

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

For assistance in identifying the appropriate polymer or material, or to develop and formulate a NBR rubber compound to meet your specific application and performance requirements, please contact ILGA S.R.L at e-mail: [ilga@ilgagomma.com](mailto:ilga@ilgagomma.com) or phone: +39 0456336521 / 0456336514.

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