

## **HNBR - Highly Saturated Nitrile or Hydrogenated Acrylonitrile Butadiene**

**Hardness Range** 30 to 95 Durometer Shore A

**Temperature Range** - 40° C to + 150° C

**Advantages** in performance...

- for abrasion resistance, adhesion to metal & rigid materials, compression set, impact resistance, tear resistance, and vibration dampening.
- in alcohols, animal & vegetable oils, aliphatic hydrocarbon fuels, extended or oxygenated fuels, LP gases & fuel oils, mineral oils, aromatic & non-aromatic petroleum products, and silicone oils.
- for coloring capabilities, low gas permeability, ozone resistance, oxidation resistance, sunlight resistance, weather resistance, and water resistance.

**Limitations** in performance...

- in concentrated alkalis, alkyl phosphate esters, aryl phosphate esters, ethers, halogenated solvents, halogenated hydrocarbons, ketones, and selected solvents.
- for flame resistance.

## ***Rubber Material Selection Guide HNBR or Highly Saturated Nitrile Halogenated Acrylonitrile Butadiene***

- Abbreviation HNBR
- ASTM D-2000 Classification DH
- Chemical Definition Hydrogenated Acrylonitrile Butadiene

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

• Durometer or Hardness Range	30 – 95 Shore A
• Tensile Strength Range	1,500 – 3,500 PSI
• Elongation (Range %)	90 % – 550 %
• 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	Excellent
• Resilience / Rebound	Good
• Tear Resistance	Good to Excellent
• Vibration Dampening	Fair to Good

**◆ Chemical Resistance**

- Acids, Dilute Good
- Acids, Concentrated Fair to Good
- Acids, Organic (Dilute) Good
- Acids, Organic (Concentrated) Fair to Good

***Rubber Material Selection Guide HNBR or Highly Saturated Nitrile  
Halogenated Acrylonitrile Butadiene*****◆ Chemical Resistance**

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

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### **◆ Environmental Performance**

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

For assistance in identifying the appropriate polymer or material, or to develop and formulate a HNBR 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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