Rubber Material Selection Guide
IIR or Butyl
Isobutylene Isoprene Rubber

- Abbreviation: IIR
- ASTM D-2000 Classification: AA, BA, CA
- Chemical Definition: Isobutylene Isoprene
- RRP Compound Number Category: 50000 Series

Physical & Mechanical Properties
- Durometer or Hardness Range: 40 – 90 Shore A
- Tensile Strength Range: 500 – 3,000 PSI
- Elongation (Range %): 300 % – 850 %
- Abrasion Resistance: Fair to Good
- Adhesion to Metal: Good
- Adhesion to Rigid Materials: Fair to Good
- Compression Set: Fair to Good
- Flex Cracking Resistance: Good to Excellent
- Impact Resistance: Good
- Resilience / Rebound: Fair to Good
- Tear Resistance: Good
- Vibration Dampening: Excellent

Chemical Resistance
- Acids, Dilute: Good to Excellent
- Acids, Concentrated: Fair to Excellent
- Acids, Organic (Dilute): Good
- Acids, Organic (Concentrated): Fair to Good
Chemical Resistance

- Acids, Inorganic: Good
- Alcohol’s: Good to Excellent
- Aldehydes: Good
- Alkalies, Dilute: Good to Excellent
- Alkalies, Concentrated: Good to Excellent
- Amines: Good
- Animal & Vegetable Oils: Good to Excellent
- Brake Fluids, Non-Petroleum Based: Good
- Diester Oils: Poor to Good
- Esters, Alkyl Phosphate: Good to Excellent
- Esters, Aryl Phosphate: Excellent
- Ethers: Poor to Fair
- Fuel, Aliphatic Hydrocarbon: Poor
- Fuel, Aromatic Hydrocarbon: Poor
- Fuel, Extended (Oxygenated): Poor
- Halogenated Solvents: Poor
- Hydrocarbon, Halogenated: Poor
- Ketones: Poor to Excellent
- Lacquer Solvents: Fair to Good
- 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: Poor
- Solvent Resistance: Poor
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♦ Thermal Properties
  ▪ Low Temperature Range - 70º F to - 40º F
  ▪ Minimum for Continuous Use (Static) - 60º F
  ▪ Brittle Point - 90º F to - 50° F
  ▪ High Temperature Range + 250º F to + 300º F
  ▪ Maximum for Continuous Use (Static) + 300º F

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

For assistance in identifying the appropriate polymer or material, or to develop and formulate an IIR / butyl 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.

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