

## **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
◆ <b><u>Physical &amp; Mechanical Properties</u></b>	
▪ 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
◆ <b><u>Chemical Resistance</u></b>	
▪ Acids, Dilute	Good to Excellent
▪ Acids, Concentrated	Fair to Excellent
▪ Acids, Organic (Dilute)	Good
▪ Acids, Organic (Concentrated)	Fair to Good

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◆ **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               | - 70° F to - 40° F   |
| ▪ Minimum for Continuous Use (Static) | - 60° F              |
| ▪ Brittle Point                       | - 90° F to - 50° F   |
| ▪ High Temperature Range              | + 250° F to + 300° F |
| ▪ Maximum for Continuous Use (Static) | + 300° 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](mailto:sales@robinsonrubber.com) or phone: +1-763-535-6737.

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