

## **Rubber Material Selection Guide BR or Polybutadiene**

- Abbreviation BR
- ASTM D-2000 Classification AA
- Chemical Definition Polybutadiene
- RRP Compound Number Category 13-0000 Series

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

- Durometer or Hardness Range 45 – 80 Shore A
- Tensile Strength Range 500 – 2,000 PSI
- Elongation (Range %) 450 % – 650 %
- Abrasion Resistance Fair to Excellent
- Adhesion to Metal Good
- Adhesion to Rigid Materials Fair to Good
- Compression Set Good to Excellent
- Flex Cracking Resistance Fair to Excellent
- Impact Resistance Poor to Good
- Resilience / Rebound Fair to Excellent
- Tear Resistance Poor to Good
- Vibration Dampening Fair to Good

### ◆ **Chemical Resistance**

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

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### ◆ Chemical Resistance

▪ Alcohol's	Fair to Good
▪ Aldehydes	Good
▪ Alkalies, Dilute	Fair to Good
▪ Alkalies, Concentrated	Fair to Good
▪ Amines	Poor to Good
▪ Animal & Vegetable Oils	Poor to Good
▪ Brake Fluids, Non-Petroleum Based	Poor to 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	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	Poor
▪ Solvent Resistance	Poor

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### ◆ Thermal Properties

▪ Low Temperature Range	- 150° F to - 100° F
▪ Minimum for Continuous Use (Static)	- 90° F
▪ Brittle Point	- 100° F
▪ High Temperature Range	+ 180° F to + 220°
▪ Maximum for Continuous Use (Static)	+ 200° F

### ◆ Environmental Performance

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

For assistance in identifying the appropriate polymer or material, or to develop and formulate a polyacrylate / acrylic 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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