

## **Rubber Material Selection Guide**

### **Synthetic Natural Rubber / Synthetic Polyisoprene**

#### **SNR or IR**

- |                                |                        |
|--------------------------------|------------------------|
| ▪ Abbreviation                 | SNR or IR              |
| ▪ ASTM D-2000 Classification   | AA                     |
| ▪ Chemical Definition          | Synthetic Polyisoprene |
| ▪ RRP Compound Number Category | 10000 Series           |

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

- |                               |                   |
|-------------------------------|-------------------|
| ▪ Durometer or Hardness Range | 30 – 95 Shore A   |
| ▪ Tensile Strength Range      | 500 – 3,500 PSI   |
| ▪ Elongation (Range %)        | 300 % – 900 %     |
| ▪ Abrasion Resistance         | Good to Excellent |
| ▪ Adhesion to Metal           | Excellent         |
| ▪ Adhesion to Rigid Materials | Excellent         |
| ▪ Compression Set             | Excellent         |
| ▪ Flex Cracking Resistance    | Excellent         |
| ▪ Impact Resistance           | Good to Excellent |
| ▪ Resilience / Rebound        | Excellent         |
| ▪ Tear Resistance             | Good to Excellent |
| ▪ Vibration Dampening         | Good to Excellent |

#### ◆ **Chemical Resistance**

- |                                 |                   |
|---------------------------------|-------------------|
| ▪ Acids, Dilute                 | Fair to Excellent |
| ▪ Acids, Concentrated           | Poor to Good      |
| ▪ Acids, Organic (Dilute)       | Fair to Good      |
| ▪ Acids, Organic (Concentrated) | Good              |
| ▪ Acids, Inorganic              | Good              |
| ▪ Alcohol's                     | Good to Excellent |

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

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◆ **Thermal Properties**

- |                                       |                      |
|---------------------------------------|----------------------|
| ▪ Low Temperature Range               | - 20° F to - 70° F   |
| ▪ Minimum for Continuous Use (Static) | - 60° F              |
| ▪ Brittle Point                       | - 80° F              |
| ▪ High Temperature Range              | + 180° F to + 220° F |
| ▪ Maximum for Continuous Use (Static) | + 180° F             |

◆ **Environmental Performance**

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

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