Rubber Material Selection Guide
Urethanes
AU – Polyester Urethane or Polyether Urethane

- Abbreviation: AU or EU
- ASTM D-2000 Classification: BG
- Chemical Definition: Polyester / Polyether Urethane
- RRP Compound Number Category: 60000 Series

Physical & Mechanical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durometer or Hardness Range</td>
<td>35 – 95 Shore A</td>
</tr>
<tr>
<td>Tensile Strength Range</td>
<td>500 – 6,000 PSI</td>
</tr>
<tr>
<td>Elongation (Range %)</td>
<td>250 % – 900 %</td>
</tr>
<tr>
<td>Abrasion Resistance</td>
<td>Excellent</td>
</tr>
<tr>
<td>Adhesion to Metal</td>
<td>Excellent</td>
</tr>
<tr>
<td>Adhesion to Rigid Materials</td>
<td>Good</td>
</tr>
<tr>
<td>Compression Set</td>
<td>Poor to Good</td>
</tr>
<tr>
<td>Flex Cracking Resistance</td>
<td>Fair to Good</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>Good to Excellent</td>
</tr>
<tr>
<td>Resilience / Rebound</td>
<td>Poor to Good</td>
</tr>
<tr>
<td>Tear Resistance</td>
<td>Good to Excellent</td>
</tr>
<tr>
<td>Vibration Dampening</td>
<td>Fair to Good</td>
</tr>
</tbody>
</table>

Chemical Resistance

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acids, Dilute</td>
<td>Fair to Good</td>
</tr>
<tr>
<td>Acids, Concentrated</td>
<td>Poor</td>
</tr>
<tr>
<td>Acids, Organic (Dilute)</td>
<td>Fair</td>
</tr>
<tr>
<td>Acids, Organic (Concentrated)</td>
<td>Poor</td>
</tr>
<tr>
<td>Acids, Inorganic</td>
<td>Poor to Fair</td>
</tr>
<tr>
<td>Alcohol’s</td>
<td>Good</td>
</tr>
</tbody>
</table>
Chemical Resistance

- Aldehydes: Poor
- Alkalies, Dilute: Fair to Good
- Alkalies, Concentrated: Poor to Good
- Amines: Poor to Good
- Animal & Vegetable Oils: Fair to Excellent
- Brake Fluids, Non-Petroleum Based: Poor
- Diester Oils: Poor to Good
- Esters, Alkyl Phosphate: Poor
- Esters, Aryl Phosphate: Poor
- Ethers: Fair
- Fuel, Aliphatic Hydrocarbon: Good to Excellent
- Fuel, Aromatic Hydrocarbon: Poor to Fair
- Fuel, Extended (Oxygenated): Fair to Good
- Halogenated Solvents: Poor to Good
- Hydrocarbon, Halogenated: Fair to Good
- Ketones: Poor
- Lacquer Solvents: Poor
- LP Gases & Fuel Oils: Fair to Good
- Mineral Oils: Good to Excellent
- Oil Resistance: Good
- Petroleum Aromatic: Good
- Petroleum Non-Aromatic: Good
- Refrigerant Ammonia: Poor
- Refrigerant Halofluorocarbons: R-12
- Refrigerant Halofluorocarbons w/ Oil: R-12
- Silicone Oil: Excellent
- Solvent Resistance: Poor
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♦ Thermal Properties
  - Low Temperature Range - 65º F to - 40º F
  - Minimum for Continuous Use (Static) - 65º F
  - Brittle Point - 60º F to - 80º F
  - High Temperature Range + 180º F to + 220º F
  - Maximum for Continuous Use (Static) + 200º F

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

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