

## 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

- |                               |                   |
|-------------------------------|-------------------|
| ▪ Durometer or Hardness Range | 35 – 95 Shore A   |
| ▪ Tensile Strength Range      | 500 – 6,000 PSI   |
| ▪ Elongation (Range %)        | 250 % – 900 %     |
| ▪ Abrasion Resistance         | Excellent         |
| ▪ Adhesion to Metal           | Excellent         |
| ▪ Adhesion to Rigid Materials | Good              |
| ▪ Compression Set             | Poor to Good      |
| ▪ Flex Cracking Resistance    | Fair to Good      |
| ▪ Impact Resistance           | Good to Excellent |
| ▪ Resilience / Rebound        | Poor to Good      |
| ▪ Tear Resistance             | Good to Excellent |
| ▪ Vibration Dampening         | Fair to Good      |

#### ◆ Chemical Resistance

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

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##### ◆ 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               | - 65° F to - 40° F   |
| ▪ Minimum for Continuous Use (Static) | - 65° F              |
| ▪ Brittle Point                       | - 60° F to - 80° F   |
| ▪ High Temperature Range              | + 180° F to + 220° F |
| ▪ Maximum for Continuous Use (Static) | + 200° 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](mailto:sales@robinsonrubber.com) or phone: +1-763-535-6737.

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