

Polyisobutylene Rubber (Butyl)

ASTM D1418 & ISO 1629 Designation: IIR, BIIR, CIIR

ASTM D2000, SAE J200 Type/Class: AA, BA

Mil-R-3065 (Mil-Std 417) Class: RS



Advantages: Good ozone and weathering resistance; very low permeability to gasses; high energy absorption; good heat resistance; good low temperature flexibility; can be compounded to give very good tensile strength.

Limitations: Only moderate abrasion and compression set; low tensile strength and resilience; readily combustible; not recommended for use in contact with oils or hydrocarbon solvents. Very slow curing unless modified with chloro or bromo butyl.

Physical & Mechanical Properties

Durometer or Hardness Range: 40-90 Shore A

Tensile Strength Range: 500 - 2,900 PSI

Elongation (Range%): 300% - 850%

Abrasion Resistance: Fair to Good

Adhesion to Metal: Good

Adhesion to Rigid Materials: 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

Thermal Properties

General Temperature Range -70°F to 300°F

Min. for continuous Use (Static): -60°F

Brittle Point: -70°F

Max. 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

Weather Resistance: Excellent

Water Resistance: Good to Excellent

Chemical Resistance

Acids, Dilute: Good to Excellent

Acids, Concentrated: Fair to Excellent

Acids, Organic (Dilute): Good

Acids, Organic (Concentrated): Fair to Good

Alcohols: 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

Esthers: Poor to Fair

Fuel, Aliphatic Hydrocarbon: Poor

Fuel, Aromatic Hydrocarbon: Poor

Fuel, Extended (Oxygenated): Poor

Halogenated Solvents: Poor

Hydrocarbon, Halogenated: Poor

Ketones (MEK, acetone): 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