

Materials

SURESH ENTERPRISES can support you with engineering assistance including tool design, material recommendation, compound formulation and prototype development. Additionally, for a fee, we can provide the typical tests commonly required for new compound development or reverse engineering. Listed are the most popular materials provided.

- **BUNA N (NITRILE):**

Has excellent resistance to petroleum oils and gasolines. Resistance to hydrocarbons, acids and bases is good. The temperature range is -40°F to +212°F, intermittent to +230°F. Excellent resistance to permanent compression. It does not possess good resistance to ozone, sunlight or weather. Also available in an FDA compound.

- **NEOPRENE (CHLOROPRENE):**

Neoprene has good resistance to oils, sunlight and aging. Temperature range is -40°F to +230°F, intermittent to +250°F. Resistance to compression set is good. Chemical resistance to silicone oil and grease, refrigerants, ammonia and carbon dioxide. Also available in an FDA compound.

- **SILICONE**

Silicone retains good elastomeric properties at both low and high temperatures. Should not be exposed to fuels, solvents or silicone fluids. Silicone has excellent resistance to ozone, aging and weather. Serviceable temperature range from -67°F to +400°F, intermittent to +450°F. Also available in an FDA compound.

- **EPDM (EPR):**

EPDM combines excellent resistance to deteriorative effects of ozone, oxygen, weather, heat and many chemicals. Its serviceable temperature range is -40°F to +250°F and intermittent to +275°F. It is not recommended for use in contact with petroleum oils or fluids. Also available in an FDA compound.

- **FLUOROELASTOMER (VITON®)**

Viton® has excellent resistance to high temperatures, ozone, oxygen, fuels, mineral oil and synthetic hydraulic fluids. Maximum operating temperatures run from 400°F in continuous service up to 500°F in intermittent service. Also available in an FDA compound.

- **POLYURETHANE**

Polyurethane elastomers, as a class, have excellent wear resistance and high tensile strength, along with excellent ozone and oxidation resistance.

- **NATURAL RUBBER**

Crude natural rubber is found in the juices of many plants, including the shrub guayule, Russian dandelion, goldenrod and dozens of other shrubs, vines and trees. The principal source is the tree Hevea Brasiliensis which is native to Brazil. Natural rubber has high resilience, good tensile strength and good tear resistance. It does not perform well when exposed to chemicals and petroleum derivatives. Natural rubber is inferior to many of the synthetics in heat aging, resistance to sunlight, oxygen, ozone, solvents and oils. The temperature range is -55°C to +55°C (-67°F to +122°F).

- **SBR (BUNA S)**

SBR is a copolymer of styrene and butadiene and has properties similar to natural rubber. It has greater abrasion resistance than natural rubber, better wear resistance and better low temperature flexibility. Though superior in water resistance to natural rubber, it has about the same resistance to solvents and chemicals. It has better heat resistance and heat aging qualities than natural rubber, and in excess heat it hardens and becomes brittle instead of softening as does natural rubber. Resistance to sunlight and ozone is similar to natural rubber. The temperature range of SBR is -55°C to +70°C (-67°F to +158°F). SBR rubber is available in sheet material, but we do not carry it in cord stock.

- **BUTYL**

Butyl rubber is a copolymer of isobutylene and isoprene. It has exceptionally low gas and moisture permeability and outstanding resistance to heat aging, weather, ozone, chemical attack, flexing, abrasion and tearing. It has good resistance to phosphate ester based hydraulic fluids, and has excellent electrical isolation performance. Butyl is not recommended for use when in contact with petroleum oils and fluids. The temperature range is -55°C to +120°C (-67°F to +248°F). We carry only in sheet material.

- **TEFLON**

When parts are fabricated from TFE (polytetrafluoroethylene) the exceptional chemical, electrical, mechanical and thermal properties, become apparent. TFE properties are as follows: extreme corrosion resistance, excellent weathering, nonflammable, very low frictional coefficient, no-adhesive, high heat resistance, and surface resistivity, FDA compliant, USDA approved. The working temperature range for Teflon is -200°C to +260°C (-328°F to +500°F).