

THERMOSET RUBBER MATERIAL LISTING

ETHYLENE PROPYLENE (EPDM) DIENE MONOMER

Excellent weathering, ozone, and water resistance. Service range -64 to +300. Generally peroxide cured for superior physical properties. Not recommended for petroleum oils. FDA and NSF approvable grades available.

- 2041: 70 Duro, FDA & NSF Approved, purple color, excellent compression set resistance & low swell
- 2061: 70 Duro, formulated to meet heavy equipment specifications, excellent physical properties with low set
- 2064: 70 Duro, FDA approved, black color, excellent compression set resistance, strong physicals
- 2442: 60 Duro, FDA approved, black color, low water swell, good set resistance
- 2599: 75 Duro, good general purpose material, strong base physicals
- 2664: 70 Duro, formulated specifically for brake fluid applications requiring low swell
- 2870: 70 Duro, most economical peroxide cured material available
- 2875: 75 Duro, most economical peroxide cured material available

other EPDM materials available in durometers from 45A to 90A durometer

FLUOROCARBON RUBBER (FKM)

(VITON₁) Outstanding chemical and heat resistance. Temp range of -15 to +425F. Poor steam resistance. FDA and NSF approvable grades available.

- F7001: 75 Duro, standard line fluorocarbon material, good base physicals
- F9001: 90 Duro, standard line fluorocarbon material, formulated for higher pressure applications
- FB7001: 75 Duro, brown color, formulated to meet heavy equipment brown color and physical requirements
- FB9001: 90 Duro, brown color, formulated to meet heavy equipment and diesel engine color requirements with higher pressures.
- FD7005: 75 Duro, black color, FDA approved, with low swell, good basic fluorocarbon performance
- FG7001: 75 Duro, green color, formulated to meet fuel injection system specifications

other FKM materials available in durometers from 55A to 95A durometer

SPECIAL FLUOROCARBONS (FKM)

Modified fluorocarbon materials widen the temperature range and provide greater chemical resistance.

- 5059: 75 Duro, black color, highly fluorinated compound to resist harsh chemical environments
- CHEMRAZ₂: Highly fluorinated, resistant to challenging environments
- KALREZ₃: Perfluorinated for the ultimate in inertness and the most difficult chemical applications
- AFLAS₄: Highly fluorinated elastomer to meet the requirements of specialty applications with caustic fluids and gasses
- TEFLON₅: Pertetrafluoroethylene (PTFE), extremely inert but poor elastomeric sealing ability

other specialty FKM materials available in durometers from 55A to 95A durometer

FLUROSILICONE (FSI)

A blend of the high temp range of silicone coupled with good oil and fuel resistance. Service range of -100 to +350F.

- 2246: 60 Duro, blue color, good basic fluorosilicone performance
- 2247: 70 Duro, blue color, good basic fluorosilicone performance

SPECIALTY DUROMETERS AVAILABLE

CHLOROPRENE (CR)

(NEOPRENE) Good general purpose material with resistance to water, oils, and oxygen. Often called out in lower temperature applications. Service range of -65 to +300F.

- 7770: 70 Duro, black color, standard chloroprene material

durometers available from 50A to 90A

NITRILE (NBR)

(BUNA) Standard sealing compound. Good basic resistance to petroleum oils and water. Temperature range: -40 to +250 F.

- 1594: 70 Duro, FDA approved, good basic physical properties
- 2455: 70 Duro, FDA approved, formulated to meet British Water Board requirements
- 4038: 70 Duro, peroxide cured, formulated to meet specifications for heavy equipment
- 4070: 70 Duro, FDA approved, formulated with a high nitrile content for low swell in oil immersion
- 4170: 70 Duro, most economical material, recommended for basic nitrile applications
- 4190: 90 Duro, most economical material, recommended for basic nitrile applications with higher pressures
- 4470: 70 Duro, excellent high grade material for higher performance results
- 4490: 90 Duro, excellent high grade material for higher performance in higher pressures

OTHER NITRILE MATERIALS FROM 40A TO 90A DURO AVAILABLE

MODIFIED NITRILE (HNBR)

Modified nitrile rubber allows for wider temperature and chemical resistance coupled with improved mechanical properties. Service range: - 40 to + 275F.

- 2709: 70 Duro, green color, formulated to meet automotive A/C specifications
- 2848: 70 Duro, formulated to meet requirements for lower coefficient of friction and breakaway friction

SOME SPECIALTY DUROMETERS AVAILABLE

POLYURETHANE RUBBER (AU, EU)

Superior mechanical properties with a service range of -65 to +200F. Resistant to petroleum products and ozone. Ester types are not recommended for water. May exhibit hydrolytic instability.

- 62270: 70 Duro, isocyanate cured, formulated for drive belt applications, low tensile set, (2) year max shelf life.
- 65270: 70 Duro, isocyanate cured, formulated for high performance coupled with hydrolytic stability
- 65290: 90 Duro, isocyanate cured, formulated for high performance coupled with hydrolytic stability
- 65295: 95 Duro, isocyanate cured, formulated for high performance coupled with hydrolytic stability

SOME SPECIALTY DUROMETERS AND DERRIVATIONS AVAILABLE

SILICONE RUBBER (GE)

Good dry heat resistance but poor mechanical properties Acceptable in water and most petroleum oils. Service range -100 to + 450F.

- 8819: 60 Duro, red color, good basic silicone material
- 8820: 70 Duro, red color, good basic silicone material
- 8873: 70 Duro, yellow color, formulated to meet specifications for heavy equipment
- 8970: 70 Duro, red color, minimum fugitive outgassing in extremely high temperature environments

DUROMETERS FROM 40A TO 90A AVAILABLE

PLEASE NOTE THAT THIS IS JUST A PARTIAL LIST OF AVAILABLE MATERIALS. SPECIAL COMPOUNDING AND MIXING ARE ALSO AVAILABLE TO MEET ALL OF YOUR SEALING NEEDS. REAL SEAL CAN ALSO TAILOR A SPECIFIC COMPOUND FOR YOUR APPLICATION'S DEMANDS, SUCH AS LOW SET EPDM, LOW OUTGASSING SILICONE, HIGH NITRILE, AND HIGH STRENGTH POLYURETHANE. IF YOU DO NOT SEE THE MATERIAL THAT YOU NEED ON THE LIST, OR NEED ASSISTANCE IN MATERIAL SELECTION, PLEASE CONTACT ONE OF OUR EXPERIENCED SALES ENGINEERS. IF YOU WOULD LIKE ADDITIONAL INFORMATION ON ANY REAL SEAL MATERIAL, SPEC SHEETS ARE ON FILE FOR IMMEDIATE FAX TRANSFER.

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THERMOPLASTIC MATERIAL LISTING

THERMOPLASTIC POLYURETHANE (TPU) Injection molded polyurethane ranging in durometer from 80A to 72D shore. Available in FDA grades, polyester and polyether types. Excellent mechanical properties. Typically MDI cured.

E-90: Standard 90A urethane; wide use in hydraulic seals
2102-90A: Higher modulus 90A for higher "snap" and rebound
58311: FDA grade 85A polyether for food applications

OTHER MATERIALS AND HARDNESSES AVAILABLE

SPECIALTY THERMOPLASTIC POLYURETHANES (TPU) Using PPDI (para-PHENYLENE DIISOCYANATE) or other high performance isocyanates, Real Seal has produced newer, specialty urethanes with ever higher performance characteristics. As research continues on new types of TPU, Real Seal remains one of the most dynamic in the industry.

68290: PPDI based TPU, superior mechanical properties, good head and hysteresis resistance, with a service range of -20 to + 325F.

HYTREL¹: Available in many grades, the TPE exhibits improved chemical and set resistance

OTHER MATERIALS AND HARDNESSES AVAILABLE

POLYCARBONATE RESIN Extremely hard, rigid, clear material with very low gaseous and fluid permeability.

LEXAN²: Used in a number of high strength applications requiring clarity or transparency.

POLYACETAL RESIN Very hard material with high structural strength. A common engineering material, Acetal has high abrasion resistance and very low flexibility.

DELRIN³: Available in numerous grades. Suitable alternative to Nylon in most cases.

THERMOPLASTIC RUBBER (TPR) Injection molded analogs of standard thermosetting rubber materials. Mechanical properties normally lower than thermosetting analogs. NSF and FDA grades available.

SANTOPRENE⁴: Available from 55A to 50D hardness, low fluid swell, TPR EPDM analog

SARLINK⁵: Available from 55A to 50D hardness, low fluid swell, TPR EPDM analog

ALCRYN⁶: Good resiliency for TPR, low fluid swell, available in white color

GEOLAST⁴: Available from 55A to 50D hardness, low fluid swell, TPR Nitrile analog

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