

MATERIAL SELECTION

INTRODUCTION This section briefly covers the wide range of basic seal materials available to the user of the Parker TOTAL Sealing System.

MATERIAL COLOR CODE Following each material type there is a color description indicating the base color of the polymer for identification purposes.

WHY DIFFERENT MATERIALS? New hydraulic fluids are being introduced into service at a rapid rate and system operating parameters (Pressure & Temperature) are changing to meet user needs. To keep pace with these changing conditions, Parker is constantly testing and developing new seal materials to extend service life. The material types listed below are general categories only. For complete technical information, ask Parker for test reports covering your specific fluid or application.

MOLYTHANE ● GRAY

Parker Molythane is the oldest and most generally specified seal material for hydraulic service. This unique material is a superior blend of Polyurethane and internal additives (to provide lubrication) developed for long service in all petroleum based fluids. The temperature range of Molythane is -65 °F to +200 °F (-54 °C to +107 °C); 140 °F in water and high water-based fluids. Parker's Molythane offers excellent resistance to extrusion and abrasion. The most popular compound is P4615A90.

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DYNOTHANE ○ CLEAR

Parker Dynothane is a polyurethane material with improved physical properties. Dynothane offers improved compression set resistance, higher rebound resilience and tensile strength resulting in improved seal performance. Fluid compatibility same as Molythane. Temperature range is -65°F to +200°F (-54°C to +107°C). The Dynothane compound number is P4693A90.

ULTRATHANE K-24 ● YELLOW

Ultrathane is a new polyurethane material from Parker offering up to 43% reduced friction over conventional urethane materials. Because of this reduced friction and the resulting lowering of frictional heat build-up at the seal interface, the operating temperature of this material is -65°F to +225°F (-54°C to +107°C). Ultrathane fluid compatibility is the same as Parker's other high tensile urethane materials and is good for service to 5000 psi at recommended dimensions and tolerances. The Ultrathane compound number is P4622A90.

NITROXILE ● BLACK

Nitroxile is a Carboxylated Nitrile material offering 3 to 5 times greater resistance to abrasion than conventional nitrile compounds. This material is also available with internal lubrication to reduce friction. Nitroxile is suitable for general hydraulic service in petroleum based fluids, water-oil emulsions, water-glycol fluids and water base fluids (HWBF). Nitroxile's temperature range is -40°F to +250°F (-40°C to +121°C). The most popular of the Nitroxile materials are N4257A80 (w/internal lubrication), N4274A85 (ELF) for extreme low friction requirements.

POLYMYTE ● ORANGE

Parker PolyMyte is an "elastoplastic" material with exceptionally high tear strength and abrasion resistance. PolyMyte's high modulus and high durometer (53 & 65 Shore D) make it very suitable for high pressure service where extrusion is a problem. PolyMyte is suitable for service in petroleum based fluids, water base fluids (HWBF)*, phosphate ester fluids, some chlorinated fluids and solvents. Temperature range is -65°F to +275°F (-54°C to +135°C), 180°F in water and water based fluids. The standard compound is Z4651D53. * (under 180°F)

FLUOROMYTE ● PURPLE

FluoroMyte was developed to meet seal needs in high pressure hydraulic systems. FluoroMyte has exceptionally high tear strength and abrasion resistance. It also has lower friction than PolyMyte due to special lubricants disbursed in the base material. FluoroMyte has excellent resistance to oxygen, ozone, petroleum and phosphate ester based fluids. The temperature range of this material is -65°F to +300°F (-54°C to +149°C). The FluoroMyte compound number is Z4653D58.

FLUOROCARBON ● BLACK

Fluorocarbon materials offer the user a wide range of fluid compatibility and broad temperature range often resulting in reduced seal inventory requirements. Fluorocarbon is suitable for use in most hydraulic fluids (except Skydrol types and some ester/ether fluids). Temperature range is -20°F to +400°F (-29°C to +204°C). The standard Fluorocarbon compounds are V4208A90 and V42266A95 (+450°F).

NITRILE ● BLACK

Nitrile is one of the oldest and most popular seal compounds. Nitrile compounds have good resistance to abrasion, extrusion and compression-set and are generally suitable for service in petroleum, water-oil emulsions and water-glycol fluids. The temperature range of Nitrile is -40°F to +250°F (-40°C to +121°C). Special Nitrile materials may have a higher upper limit (to +300°F). The general usage Nitrile compound is N4121A90 for PolyPak seals.

ETHYLENE PROPYLENE ● BLACK

Ethylene Propylene or EPR is a useful seal material for sealing phosphate ester type hydraulic fluids such as Skydrol. Ethylene Propylene is also suitable for use with automotive brake fluids, weak caustics, acids and Methyl Ethyl Keytone. This material SHOULD NEVER BE EXPOSED TO ANY TYPE PETROLEUM BASE FLUID OR LUBRICANT. Ethylene Propylene has a temperature range of -65°F to +300°F (-54°C to +149°C) and to +400°F in steam. The standard EPR compounds are E4207A90 and E4183A80. E4270A90 is a newly developed geothermal EPR material for service to 600°F in steam applications. Also has good explosive decompression resistance in CO₂.

PARKERTHANE ○ WHITE

Parkerthane is an improved formulation of polyurethane materials with extreme resistance to extrusion and abrasion. Parkerthane is suitable for use in most petroleum based fluids. The temperature range of Parkerthane is -65°F to +200°F (-54°C to +93°C). Parkerthane is identified by compound number P4611A90.