
Depend On Us, We Can Handle The Pressure.
BALL VALVE SEAT AND SEAL MATERIALS

SEAT MATERIALS

**T > VIRGIN PTFE**
Polytetrafluoroethylene (PTFE) is a FluoroCarbon-based polymer. This seating material has excellent chemical resistance and low coefficient of friction. PTFE is non-contaminating and accepted by FDA for use in food services. Not recommended for liquid alkalis and fluorine. Affected by radiation with maximum 1 x 10⁴ rads lifetime dose. Its temperature range is -100°F to 450°F (-73°C to 232°C). Color: white.

**R > REINFORCED POLYTETRAFLUOROETHYLENE (RTFE)**
PTFE's mechanical properties are enhanced by adding percentage of filler material to provide improved strength, stability and wear resistance. Reinforcement such as glass fiber permits application at higher pressure and temperature than unfilled TFE. Affected by radiation with maximum 1 x 10⁴ rads lifetime dose. Its temperature range is from -320°F to 450°F (-196°C to 232°C). Color: off-white.

**N > NOVA**
This is a Teflon base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction-expansion than PTFE and is ideal for steam or thermal fluid applications up to 550°F (288°C). Color: black.

**H > HOSTAFLON (TFM)**
Hostaflon is an advanced chemically modified PTFE. While retaining exceptional chemical properties of conventional PTFE, it offers superior thermal and mechanical properties. Hostaflon (TFM) fills in the gaps between PTFE and more costly melt processable PFA. It can withstand temperatures from -320° to 470° F. Color: glossy white.

**D > DEVLOM “V”**
This grade of material is part of the polyamide family but has additives which allows it to perform at higher pressures and temperatures than other grades of the Nylon family. When Devlon “V” was torque tested against other Nylon materials the Devlon did not show any increase in torque data. Devlon “V” material, which does not succumb easily to aggressive chemicals, however chemicals aggressive to Devlon “V” are well documented and can be advised if required. Devlon “V” temperature range is negative 300°F up to 390°F.

**Z > ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (UHMWPE)**
Also known as High Modulus Polyethylene (HMPE) or High Performance Polyethylene (HPPE). Very tough material. It is highly resistant to corrosive chemicals, with the exception of oxidizing acids and organic solvents. It has very low coefficient of friction, and highly resistant to abrasion. This is rated to 1500 PSIG at temperatures from -70°F to 200°F (-57°C to 90°C). Color: white.
P > PEEK (UNFILLED) POLYETHERETHERKETONE
Peek Polymer offers a unique combination of chemical, mechanical and thermal properties. Excellent for water and steam application at elevated temperatures up to 600°F and pressures up to 6000 PSIG. Not applicable for concentrated sulfuric acid. Excellent resistance to radiation with maximum 1 x 10^9 rads lifetime dose. Color: beige.

U > VESPEL ® SP 21
Vespel is manufactured by DuPont using high performance polyimide resin. SP 21 is 15%, by weight, graphite filler. Graphite is added to provide low wear and friction for bearings, thrust washers, and dynamic seals. Performs well in a variety of chemical environments and a variety of industrial fluids (fuels, oils, lubricants) at elevated temperatures. Temperature range- can operate continuously from cryogenic temperatures to 650°F (343°C) with brief incursions to 900°F (482°C). Performs well in radio-active environments, even at relatively high dosage rates of exposure levels up to 1 x 10^8 rads of gamma and electron beam radiation.

Y > NYLON
Nylon is one of the most versatile and widely used thermoplastic materials. Its physical properties and reasonable price combine to make it a popular choice for numerous applications, such as seat material. This material also meets military/association specifications and may be FDA/USDA/NSF/3A dairy approved (grade dependant). Nylon has excellent corrosion and chemical resistance at low temperatures. Color: off-white, burnt orange

B > BUNAN OR NITRILE
This sealing material is widely used because of its compatibility with most hydraulic fluid media, including petroleum oils, water, water glycol, Di-Ester based fluids, air and inactive gases. Temperature range is from -65°F to 250°F (-54°C to 121°C). Color: black

N > NEOPRENE
This sealing material is excellent for refrigerants, ammonia and Freon. Its temperature range is from -35°F to 225°F (-37°C to 107°C). Color: black
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BODY SEAL MATERIALS

E > ETHYLENE-PROPYLENE EPDM
This material is recommended for low pressure steam, hot water, phosphate ester base fluid, weak alkalies and acids. Not recommended for petroleum service, hydrocarbons, alcohol and radiation. Its usable temperature range is -65°F to 300°F (-54°C to 149°C). Color: black

V > VITON- FLUOROCARBON RUBBER (FKM)
Viton is DuPont’s trademark for Fluoroelastomer. It is well known for its excellent 400°F (200°C) heat resistance. Viton offers excellent resistant to aggressive fuels and chemicals. It has cold temperature rating of -15°F. Should not be used on steam. Color: red

T > PTFE
Teflon has excellent resistance to a wide range of chemicals. It is excellent at pressures below 1500 PSI. It can withstand temperature fluctuations in excess of 200°F (93°C) and are not reusable. Color: white.

G > FLEXIBLE GRAPHITE
Is chemically resistant to attack from nearly all organic and inorganic fluids with exception of highly oxidizing chemicals, and concentrated, highly oxidizing mineral acids. Usable temperature from -70°F to 1000°F (-56°C to 538°C) on almost any media. It is Sharpe Valves standard seals in 1/2” to 4” fire rated valves. Color: shiny black

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A > HNBR
Are excellent seal materials rated for -50°F to 355°F and are Explosion Decompression approved.