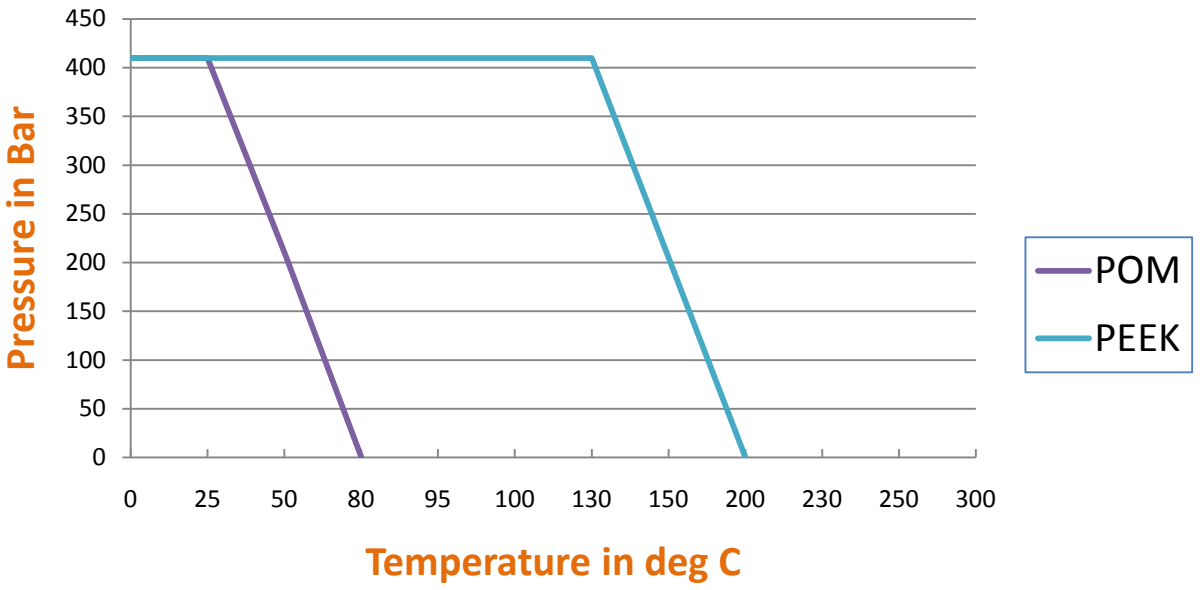
RAJEEV & COMPANY

Seat Material Selection in Ball Valves

Ball Valves can have either Soft seats or Metal seats. Soft seats are used for low temperature applications, typically below 200 deg C and Metal seats for High temperature applications up to 527 deg C.
The selection of soft seats depends on the operating pressure and temperature of the ball valve. The type of Seats supplied by KAVAATA valves, with their characteristics, are as below –

Virgin PTFE	Virgin PTFE is a common seat material used in our ball valves. Its chemical compatibility is excellent and is suitable for almost all applications. Temperature range -45 °C to 230 °C.
Reinforced PTFE (RPTFE) or (GFT)	This is PTFE with 15%-25% glass fiber reinforcement. RPTFE offers good chemical resistance and improved cycle life. Service Temperature range of -45 °C to 230 °C.
Carbon Filled PTFE (CFT)	This is PTFE reinforced with carbon. It has low co-efficient of friction and is suitable for steam and thermal fluid applications. It is inert to most media.
PEEK - PolyEtherEtherKetone	A high performance engineered thermoplastic. Excellent choice for high pressure and high temperature service. Offers excellent abrasion and corrosion resistance and is unaffected by continuous exposure to hot water or steam. Service temperature range of -56 °C to 315°C and steam service up to 260 °C.
Polyoxymethylene (POM)	Also known as acetal, polyacetal and polyformaldehyde, POM is a tough material with a very low coefficient of friction. POM seats are used in high pressure and low temperature applications. Maximum Operating Temperature is 85 deg C. It is not suitable for oxygen service.
Metal (Stellite)	Recommend for abrasive media and high temperature service up to 527°C. KAVAATA metal seats are lapped to the ball as individually matched sets, assuring perfect contact between valve ball and seats, resulting in smooth operation and tight shut off. KAVAATA offers metal seats in Shut Off Classes IV, V, and VI.

Temperature v/s Pressure Chart for POM and PEEK seat Materials



Temperature v/s Pressure Chart for PTFE, RPTFE and CFT seat Materials