

Product parameters (single mechanical seal — typical/spec ranges)

Parameter	Typical value / guidance
Seal type / description	Single mechanical seal (one rotating ring + one stationary ring; single-face contact). Can be supplied as component sets or pre-assembled cartridge.
Construction styles	Component single seals; single-spring or multiple-spring; elastomer bellows; welded metal bellows; cartridge single seals (pre-assembled).
Face material options (common)	Carbon/graphite (soft face), Silicon carbide (SiC), Tungsten carbide (TC), Ceramic (alumina) — paired typically soft vs hard (e.g., carbon vs SiC).
Secondary seals (elastomers / jackets)	NBR (Buna-N), FKM/Viton, EPDM, HNBR; PTFE/FFKM options for aggressive chemistries. Choose by temperature & chemical compatibility.
Temperature capability	Dependent on elastomer/jacket and face materials: typical elastomer seals $\approx -40^{\circ}\text{C}$ to $+150^{\circ}\text{C}$ (NBR/ HNBR/EPDM ranges vary); FKM up to $\sim 200^{\circ}\text{C}$; PTFE/jacketed seals extend higher — check part datasheet.
Pressure capability	Standard single seals used in low to moderate pressure duties (catalogues list typical working pressures and note special high-pressure designs). For critical/high-pressure services use vendor guidance and API-682 support plans.
Shaft speed / surface speed	Each seal part has allowable shaft/surface speed in its data sheet. Cartridge designs relieve installation error but confirm surface speed limits for face pair.
Balanced vs unbalanced	Single seals can be balanced (reduce net hydraulic load on faces) or unbalanced; balanced designs common for higher pressure/process reliability.
Typical failure modes / selection risks	Dry running (loss of lubricating film), thermal distortion, incorrect material selection for chemical exposure, poor shaft finish or misalignment — manufacturers provide installation & shaft finish guidance.