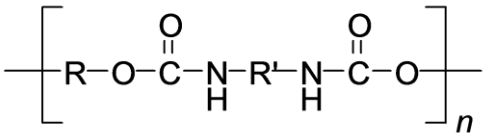
systemseals

MATERIAL SPECIFICATION SHEET

MP169



Thermoplastic Polyurethane
(H-PU, TPU)

SPECIFICATIONS

Property	Spec	Value
Hardness	ISO 868	95A ±2
Hardness	ISO 868	48D ±3
Density (g/ cm³)	ISO 1183	1.14
Tensile Strength (N/ mm²)	ASTM D-412	28.6
Ultimate Elongation	ASTM D-412	425
100% Modulus (N/ mm²)	ASTM D-412	12.7
300% Modulus (N/ mm²)	ASTM D-412	20.6
Compression Set 100°C, 24hrs	ASTM D-395	30%
Compression Set 70°C, 22hrs	ASTM D-395B	22%
Minimum Service Temp	ASTM D-7028	-40°C -40°F
Maximum Service Temp		115°C 239°F
Changes after 90 days, 80°C in distilled water: Tensile Strength Tensile 100% Modulus Tensile Elongation Hardness Volume Swell		 ≤50% reduction ≤50% reduction ≤50% reduction ≤10 pts or 10% reduction ≤±5% volumetric changes
Color		Black

DESCRIPTION

MP169 is a H-PU, TPU material with hardness 95±2 Shore A and 48±3D, specially compounded for use in high pressure hydraulic seals. The polyurethane polymer industry has enormous categories of products for a wide variety of applications. Polyurethane used in the seal industry is a thermoplastic elastomer (TPU). As the name suggests, it behaves like an elastomer but the chemistry is of a thermoplastic. The elasticity of a TPU is brought about through polymer morphology phase changes as in thermoplastics not through vulcanization as seen in other elastomers. Because of its thermoplastic nature, TPU has excellent tensile strength and abrasion resistance that other elastomers are unable to match. Meanwhile, TPUs also have good flexibility and shock absorbing performance. An additional advantage of TPUs is that they can be molded using conventional thermoplastic processes.