



High Temperature Thermoplastic Polyurethane (TPU)

SPECIFICATIONS

Property	Spec	Value
Hardness	ASTM D2240	94A
Specific Gravity	ASTM D792	1.19
Tensile Strength	ASTM D412	8500psi
Modulus @ 100% Elongation	ASTM D412	1900psi
Ultimate Elongation	ASTM D412	600%
Tear Strength	ASTM D624-54	860pli
Rebound Resilience	ASTM D2632	64%
Compression Set 70C @ 70 Hrs	ASTM D395B	16.7%
Compression Set 100C @ 70hrs	ASTM D395B	31%
Coefficient of Thermal Expansion		29 x 10 ⁻⁵
cm/cm, 73-248F		
Temperature Range		-20 to +275F
Water Absorption		~1%

DESCRIPTION

MM12 is a TPU material with hardness 94 Shore A, specially compounded for high temperature applications. 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.