

Technical Data Sheet

Type: Estane® GP 92AT is an aromatic polyether-based thermoplastic polyurethane (TPU).

Appearance: Translucent spherical pellets.

Uses: Injection molding parts

Physical Properties	Test Method	Unit	Value*
Hardness	ISO 868	Shore A Shore D	92 -
Specific Gravity	ISO 2781	g/cm ³	1.14
Modulus of elasticity – tensile test	ISO 527	MPa	45
Tensile Strength at Break	ISO 527	MPa	45
Tensile stress at			
50% Elongation		MPa	8.5
100% Elongation		MPa	10.0
300% Elongation		MPa	16.5
Elongation at Break		%	610
Compression set (1)	ISO 815		
70 hrs / 22°C		%	21
24 hrs / 70°C		%	40
Tear Strength	ISO 34-1B	kN/m	
Nicked			81
Unnicked			128
Abrasion resistance	ISO 4649	mm ³	30
Rebound Resilience	ISO 4662	%	36
Vicat Softening Point A50	ISO 306	°C	114

- * Please be aware that listed values are “typical (average) values” and should / can not be applied for specification purposes.
- * Suitable test specimen are die cut from injection molded plates 80x90x2mm according to ISO 294-5.
- * (1) compression set test samples were post cured for 16 hours @ 120°C.

Material Preparation

Prior to processing, Estane GP 92AT TPU must be dried at 100°C during 2-3 hours. It is recommended to dry the material in a dehumidifying type dryer. Target dew points to be below -30°C.

The moisture content must be less than 0.05%.

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Processing Conditions

MFI (190°C / 21.6 kg) = 20 – 40 g / 10 min.

Estane GP 92AT TPU can be injection molded on any conventional molding machine equipped with a general purpose 3-stage screw.

Typical screw L/D ratio is between 18 and 23; the optimum compression ratio is between 2:1 and 3:1.

Typical injection molding temperature profile (conditions based on an 80 Ton machine with a general purpose screw – L/D 23 – Ø 30 mm).

	°C
Feed Zone	40
Zone 1	190 – 200
Zone 2	200 – 210
Zone 3	200 – 210
Zone 4	205 – 215
Nozzle	200 - 210

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