

Technical Data Sheet

Type: Estane® GP 52DT is an aromatic polyether-based thermoplastic polyurethane (TPU).

Appearance: Translucent spherical pellets.

Uses: Injection molding parts, animal identification tags.

Physical Properties	Test Method	Unit	Value*
Hardness	ISO 868	Shore A	-
		Shore D	53
Specific Gravity	ISO 2781	g/cm ³	1.15
Modulus of elasticity – tensile test	ISO 527	MPa	78
Tensile Strength at Break	ISO 527	MPa	52
Tensile stress at			
50% Elongation		MPa	12.0
100% Elongation		MPa	14.0
300% Elongation		MPa	24.0
Elongation at Break		%	525
Compression set (1)	ISO 815		
70 hrs / 22°C		%	25
24 hrs / 70°C		%	38
Tear Strength	ISO 34-1B	kN/m	
Nicked			105
Unnicked			132
Abrasion resistance	ISO 4649	mm ³	50
Rebound Resilience	ISO 4662	%	27
Vicat Softening Point A50	ISO 306	°C	94

- 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 52DT 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 (205°C / 8.7 kg) = 20 – 40 g / 10 min.

Estane GP 52DT 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	195 – 205
Zone 2	200 – 210
Zone 3	205 – 215
Zone 4	210 – 220
Nozzle	205 - 215

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