

## Technical Data Sheet

**Type:** Estane® GP 60DB is an aromatic polyester-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	60
Specific Gravity	ISO 2781	g/cm <sup>3</sup>	1.23
Modulus of elasticity – tensile test	ISO 527	MPa	139
Tensile Strength at Break	ISO 527	MPa	48
Tensile stress at			
50% Elongation		MPa	15.5
100% Elongation		MPa	17.5
300% Elongation		MPa	29.0
Elongation at Break		%	540
Compression set (1)	ISO 815		
70 hrs / 22°C		%	31
24 hrs / 70°C		%	48
Tear Strength	ISO 34-1B	kN/m	
Nicked			143
Unnicked			179
Abrasion resistance	ISO 4649	mm <sup>3</sup>	37
Rebound Resilience	ISO 4662	%	33
Vicat Softening Point A50	ISO 306	°C	132

- 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 60DB TPU must be dried at 105°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 (210°C / 8.7 kg) = 5 – 20 g / 10 min.

Estane GP 60DB 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
<b>Feed Zone</b>	40
<b>Zone 1</b>	200 – 210
<b>Zone 2</b>	205 – 215
<b>Zone 3</b>	215 – 225
<b>Zone 4</b>	215 – 225
<b>Nozzle</b>	210 - 220

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