

Technical Data Sheet

Type: Estane[®] GP 85AB is an aromatic polyester-based thermoplastic polyurethane (TPU).

Appearance: Translucent spherical pellets.

Uses: Injection molding parts

| Physical Properties | Test Method | Unit | Value* |
|--------------------------------------|-------------|-------------------|--------|
| Hardness | ISO 868 | Shore A | 85 |
| | | Shore D | - |
| Specific Gravity | ISO 2781 | g/cm ³ | 1.20 |
| Modulus of elasticity – tensile test | ISO 527 | MPa | 17 |
| Tensile Strength at Break | ISO 527 | MPa | 35 |
| Tensile stress at | | | |
| 50% Elongation | | MPa | 5.0 |
| 100% Elongation | | MPa | 6.0 |
| 300% Elongation | | MPa | 14.0 |
| Elongation at Break | | % | 550 |
| Compression set (1) | | | |
| 70 hrs / 22°C | ISO 815 | % | 12 |
| 24 hrs / 70°C | | % | 28 |
| Tear Strength | | | |
| Nicked | ISO 34-1B | kN/m | 75 |
| Unnicked | | | 112 |
| Abrasion resistance | ISO 4649 | mm ³ | 30 |
| Rebound Resilience | ISO 4662 | % | 40 |
| Vicat Softening Point A50 | ISO 306 | °C | 111 |

- 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 85AB TPU must be dried at 90°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 85AB 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 | 185 – 195 |
| Zone 2 | 190 – 200 |
| Zone 3 | 195 – 205 |
| Zone 4 | 195 – 205 |
| Nozzle | 190 - 200 |

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