

## Technical Data Sheet

**Type:** Estane® 58142 is a 60D Polyester Thermoplastic Polyurethane (TPU).

**Features:** Fast cycling, broad temperature performance and durability.

**Uses:** Injection Molding.

Physical Properties	Value (Metric)	Unit	Test Method
Hardness (5 sec)	60 +/- 3	Shore D	ASTM D-2240
Specific Gravity	1.23		ASTM D-792
Tensile Strength	5500 (38)	psi (MPa)	ASTM D-412
Ultimate Elongation	430	%	"
<b>Tensile Stress at:</b>			
- 100% Elongation	2800 (19)	psi (MPa)	ASTM D-412
- 300% Elongation	4200 (29)	psi (MPa)	"
<b>Tear Strength:</b>			
- Graves	1100 (20)	lb/in (kg/mm)	ASTM D-624 (die C)
- Trouser	290 (5.2)	lb/in (kg/mm)	ASTM D-470
Taber Loss (1000 rev)	0.0029 (82)	oz (mg)	ASTM D-3389 (CS-17, 1000g)
T <sub>m</sub> (by DSC)	414 (212)	°F (°C)	Lubrizol Advanced Materials
T <sub>g</sub> (by DSC)	-11 (-24)	°F (°C)	Lubrizol Advanced Materials

- Prior to testing samples were conditioned at 23°C for 48 hours.
- Based on extruded sheet (30 mils).
- Listed values are "typical (average) values" and should/cannot be applied for specification purposes.

## Supply Form and Standard Packaging

- Estane® 58142 TPU is available in pellet form and packaged in 50 lb bags or 1000 lb boxes.

## Material Preparation

- Prior to processing, Estane® 58142 TPU must be dried at 220°F (104°C) for 2-4 hours.
- It is recommended to dry the material in a desiccant type dryer. Target dew point should be -40°C.
- Depending on the applied processing technique, the maximum moisture level should be 0.02%.

## Material Preparation

- Estane® 58142 TPU can be processed on any conventional injection molding machine.

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**Recommended Starting Injection Molding Temperature Profile:**

	°F/°C
<b>Rear</b>	<b>410/210</b>
<b>Middle</b>	<b>420/215</b>
<b>Front</b>	<b>435/224</b>
<b>Nozzle</b>	<b>445/229</b>
<b>Melt</b>	<b>445/229</b>

**Fill Rate:** Moderate

**Screw RPM:** 60-100

**Back Pressure:** 50 psi minimum

**Injection Pressure:** 10,000-15,000 psi (69-103 MPa)

**Holding Pressure:** 5,000-10,000 psi (35-69 MPa)

**Mold Shrinkage\*:** 0.008 (disk) in/in (cm/cm)  
0.007 (flex bar) in/in (cm/cm)

*\* Mold shrinkage was determined using ASTM D955. Actual shrinkage will vary with part size, design, and processing conditions. Please contact a Lubrizol Advanced Materials technical representative for more information.*

**Other Properties**

Properties	Value	Unit	Test Method
<b>Mechanical Data</b>			
Flexural Modulus (23 <sup>0</sup> C)	34,000 (230)	psi (MPa)	ASTM D-790
Compression Set 23 <sup>0</sup> C/22 h	34	%	ASTM D-395
Compression Set 70 <sup>0</sup> C/22 h	53	%	ASTM D-395

**For further information refer to Lubrizol Advanced Materials processing guides.**

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