

**Technical Data Sheet**

**Type:** Estane® 58144 is a 65D Polyether-type thermoplastic polyurethane (TPU) compound.

**Features:** FDA (contact Lubrizol for details). Pre-drying: 2 hours at 104°C (220°F) in Dehumidifying Hopper Dryer.

**Uses:** Injection Molding.

Typical Properties	Test Method	Typical Values*	
		SI Units	English Units
<b>Physical</b>			
Specific Gravity	ASTM D792	1.18	1.18
Shore Hardness	ASTM D2240	65D±3	65D±3
<b>Mechanical</b>			
Tensile Strength	ASTM D-412/D-638	45.9 MPa	6650 psi
Modulus			
- 100 % Elongation	ASTM D-412/D-638	24.1 MPa	3500 psi
- 300 % Elongation	ASTM D-412/D-638	38.7 MPa	5610 psi
Ultimate Elongation	ASTM D-412/D-638	340%	340%
Tensile Set @ 200% Elongation	ASTM D-412	53%	53%
Compression Set	ASTM D-395		
- 22 hours @ 23°C		66%	66%
- 22 hours @ 70°C		93%	93%
Tear Strength	ASTM D-624, Die C	170.9 kN/m	976 lb/in
Split Tear Resistance	ASTM D-470	35.9 kN/m	205 lb/in
Flexural Modulus @ 23°C	ASTM D-790	309.7 MPa	44,900 psi
Stiffness @ 23°C	ASTM D-747	217.4 MPa	31,520 psi
<b>Thermal</b>			
Glass Transition	DSC**	-40°C	-40°F
Vicat Softening Point	ASTM D-1525	102°C	216°F

\* These are typical values and should not be used for establishing specifications. Contact your representative and commercialization status.

\*\* Differential scanning calorimeter, 10°C/min. temperature program.

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	Unit = °F
	Estane® 58144 TPU
<b>Barrel, Rear</b>	390°F (199°C)
<b>Barrel, Middle</b>	400°F (204°C)
<b>Barrel, Front</b>	420°F (215°C)
<b>Nozzle</b>	425°F (218°C)
<b>Melt Temperature</b>	400°F (204°C)
<b>Drying Conditions</b>	2 hrs. @ 220°F (104°C) Target Moisture Content = Below 0.02%
<b>Mold Temperature</b>	50-75°F (10-22°C)

**Fill Rate:** Slow to moderate  
**Screw RPM:** 20-50  
**Back Pressure:** 50 psi  
**Injection Pressure:** 10,000-20,000 psi (69-138 MPa)  
**Molding Pressure:** 5,000-15,000 psi (35-103 MPa)  
**Mold Shrinkage:** 0.005 in/in (cm/cm)

\*Mold shrinkage was determined on 3"x6"x0.125" molded plaques. Actual shrinkage will vary with part size and design.

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