

Technical Data Sheet

Type: Estane[®] 58311 is a 85A Polyether-Type Thermoplastic Polyurethane (TPU).

Features: Very good physical properties, hydrolysis resistance, low temperature performance and abrasion. Wide processing window for extrusion.

Uses: Flat Die/Cast Film Extrusion, Profile Extrusion.

Physical Properties	Value (Metric)	Unit	Test Method
Hardness (5 sec)	85 +/- 3	Shore A	ASTM D-2240
Specific Gravity	1.13		ASTM D-792
Tensile Strength	6600 (45.5)	psi (MPa)	ASTM D-412
Ultimate Elongation	520	%	"
Tensile Stress at:			
- 100% Elongation	900 (6.2)	psi (MPa)	ASTM D-412
- 300% Elongation	1700 (11.7)	psi (MPa)	"
Tear Strength:			
- Graves	390 (7.0)	lb/in (kg/mm)	ASTM D-624 (die C)
- Trouser	120 (2.1)	lb/in (kg/mm)	ASTM D-470
T _m (by DSC)	275 (135)	°F (°C)	Lubrizol Advanced Materials
T _g (by DSC)	-56 (-49)	°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[®] 58311 TPU is supplied in pellet form and packaged in 50 lb bags or 1000 lb boxes.

Material Preparation

- Prior to processing, Estane[®] 58311 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%.

Processing Conditions

- Estane[®] 58311 TPU can be processed on any conventional extruder.

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Recommended Starting Extrusion Temperature Profile:

	°F/°C
Zone 1	340/171
Zone 2	350/177
Zone 3	360/182
Zone 4	370/188
Adapter (5)	370/188
Die Zone 1	370/188
Die Zone 2	370/188

Melt Temp. Mid-Range: 365°F/185°C
Screen Pack Recommendation: 20/40/80/20

High Performance Film & Sheet

Application Properties	Value (Metric)	Unit	Test Method
Tensile Set (200% elongation)	14	%	ASTM D-412
FDA 177.1680 (dry bulk foods)	1.3	%	ASTM D-471
FDA 177.2600 (wet/fatty foods)	Complies		
NSF 61 Status	Complies		

For further information refer to Lubrizol Advanced Materials processing guides.

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