

Technical Data Sheet

Type: Estane® 58123 is an aromatic polyether-based thermoplastic polyurethane (TPU).

Features: High moisture vapor transmission with low water swell and excellent low temperature and elasticity properties.

Uses: Blown and flat die/cast film extrusion, Injection molding and cable jacketing.

Physical Properties	Value	Units	Test Method
Hardness (5 sec)	70	Shore A	ASTM D792
Specific Gravity	1.060		ASTM D2240
Tensile Strength	5300 (36.5)	psi (MPa)	ASTM D412
Ultimate Elongation	730	%	"
Tensile Stress at:			
- 100% Elongation	500 (3.4)	psi (MPa)	ASTM D412
- 300% Elongation	800 (5.5)	psi (MPa)	"
Tear Strength:			
- Graves	380 (6.8)	lb/in (kg/mm)	ASTM D624 (die C)
- Trouser	110 (2.0)	lb/in (kg/mm)	ASTM D470
Taber Loss (1000 rev)	0.0006 (17)	oz (mg)	ASTM D3389 (H18, 1000g)
T _m (by DSC)	275 (135)	°F (°C)	Lubrizol Advanced Materials
T _g (by DSC)	-94 (-70)	°F (°C)	Lubrizol Advanced Materials

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

Supply Form and Standard Packaging

- Estane® 58123 TPU is available in pellet form and packaged in 50 lb bags or 1000 lb boxes.

Material Preparation

- Prior to processing, Estane® 58123 TPU must be dried at 180°F (82°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® 58123 TPU can be processed on any conventional extruder.

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<http://go.lubrizol.com/EP>

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)	380/193
Die Zone 1 (6)	380/193
Die Zone 2	380/193

- Melt Temp. Mid-Range: 375°F/191°C
- Screen Pack Recommendation: 20/40/80

Recommended Injection Molding Process:

	Estane® 58123 TPU
Barrel, Rear	375° F (190° C)
Barrel, Middle	390° F (199° C)
Barrel, Front	420° F (215° C)
Nozzle	420° F (215° C)
Melt Temperature*	425° F (218° C)
Material Drying*	Moisture below 0.02%
Mold Temperature	60-90° F (15-32° C)

Melt temperature verified by taking an air shot and verifying with pyrometer.

This can be achieved by drying in a desiccant dryer capable of a dew point of -40° F and dryer temperature of 200°F for 2 hours; it can also be dried overnight at 180°F in desiccant dryer. A tray dryer can be used with temperature set at 200°F for 4 hours.

Fill Rate: Slow to Moderate

Screw RPM: 30-80

Back Pressure: 30- 50 psi

Injection Pressure: 3000-15000 PSI

Holding Pressure: 145-725 PSI

High Moisture Vapor Transmission Grade:

Application Properties	Value	Unit	Test Method
MVT: upright cup (23C, 50%RH)	420	g/m2*24h	ASTM E96B
MVT: Mocon (38C, 90%RH)	3200	g/m2*24h	ASTM D6701
Volume Swell in water	1.5	%	ASTM D471
Tensile Set (200% elongation)	6	%	ASTM D412
Kofler Melt Point	302 (150)	°F (°C)	Lubrizol Advanced
USP Class VI Status	NOT TESTED		
FDA 177.1680 (dry bulk foods)	COMPLIES*		
FDA 177.2600 (wet/fatty foods)	COMPLIES		
NSF 61 Status	NOT TESTED		

Only for repeat use articles.

For further information refer to Lubrizol Advanced Materials processing guides.

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