

Technical Data Sheet

Type: Estaloc™ 59104 is a Polyester-Type Reinforced Engineering Thermoplastic (RETPU).

Features: Fast cycling, dimensional stability, durability, aesthetics, low temperature impact.

Uses: Injection molding.

Physical Properties	Value (Metric)	Unit	Test Method
Hardness (5 sec)	68 +/- 3	Shore D	ASTM D-2240
Specific Gravity	1.31		ASTM D-792
Tensile Strength	5800 (40.0)	psi (MPa)	ASTM D-638
Tensile Modulus		psi (MPa)	"
Elongation	40	%	"
Flexural Strength	6820 (47.0)	psi (MPa)	ASTM D-790
Flexural Modulus	175,000 (1206.6)	psi (MPa)	"
Izod Impact, notched		Ft-lb's./in. (J/M)	ASTM D-256
@ 73°F (23°C)	13 (694)		
@ -40°F (-40°C)	5.5 (294)		

- 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

Estaloc 59104 RETPU is supplied in pellet form and packaged in 50 lb bags or 1000 lb boxes.

Material Preparation

- Prior to processing, Estaloc 59104 RETPU 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

Estaloc 59104 RETPU can be processed on any conventional injection molding machine.

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Recommended Starting Injection Molding Temperature Profile:

	°F/°C
Rear	410/210
Middle	420/215
Front	430/221
Nozzle	440/227
Melt Temperature*	440/227

* Melt temperature by pyrometer check of air shot

Fill Rate: Slow to Moderate
Screw RPM: 30-80
Back Pressure: 50 psi
Injection Pressure: 10,000-15,000 psi (69-103 MPa)
Holding Pressure: 5,000-10,000 psi (35-69 MPa)

Estaloc 59104 RETPU, a 68D Polyester has been developed for superior performance characteristics for injection molding applications. Among the critical performance parameters are:

- **Ease of processing** - important for retaining efficient transfer of load over time
- **Good Impact resistance** - provides best transfer of load and eliminates rubbing and frictional temperature buildup
- **Adhesion for over molding** - prevents rub off of material which can propagate into belt failure

Properties	Value (Metric)	Unit	Test Method
Thermal Data			
Heat Deformation Temperature			
66 psi unannealed	203 (95)	°F/°C	-
264 psi unannealed	142 (61)	°F/°C	-

For further information refer to Lubrizol Advanced Materials processing guides.

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