

Technical Data Sheet

Type: Estaloc™ 59600 RETPU is a polyester-type reinforced engineered thermoplastic (RETP).

Description: Fast Cycling, dimensional stability, durability, aesthetics, low temperature impact.

Uses: Injection Molding.

Physical Properties	Value (Metric)	Unit	Test Method
Hardness (5 sec)	80 +/- 3	Shore D	ASTM D-2240
Specific Gravity	1.66		ASTM D-792
Tensile Strength	14,000 (96)	psi (MPa)	ASTM D-638
Tensile Modulus	797,000 (5492)	psi (MPa)	"
Elongation	13	%	"
Flexural Strength	18,400 (126)	psi (MPa)	ASTM D-790
Flexural Modulus	652,000 (4492)	psi (MPa)	"
Izod Imapct		Ft-lb's/in. (J/M)	ASTM D-256
@ 73°F (23°C)	8 (427)		
@ -40°F (-40°C)	3.4 (182)		

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

Estaloc 59600 RETPU, an 80D Polyester has been developed for superior performance characteristics for injection molding applications. Among the critical performance parameters are:

- *Ease of Processing*
- *Good Impact Resistance*
- *Adhesion for Overmolding*

Supply Form and Standard Packaging

- **Estaloc 59600 RETPU** is supplied in pellet form and packaged in 50 lb bags or 1000 lb boxes.

Material Preparation

- Prior to processing, **Estaloc 59600 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 59600 RETPU** can be processed on most conventional injection molding machines.

See reverse side for processing information.

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Recommended Starting Injection Molding Temperature Profile:

	°F/°C
Rear	420/216
Middle	440/227
Front	460/238
Nozzle	470/243
Melt	470/243

* 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)

Properties	Value (Metric)	Unit	Test Method
Thermal Data			
Heat Deformation Temperature			
66 psi unannealed	245 (118)	°F(°C)	-
264 psi unannealed	174 (79)	°F(°C)	-
Tensile Properties vs. Temperature			
Stress @ yield	14,600	psi	
Elongation @ yield	9.09	%	
Stress @ break	14,400	psi	
Elongation @ break	9.65	%	
Tensile Modulus	1,130,000	psi	
Flexural Properties vs. Temperature			
Stress @ yield	17,400	psi	
Strain @ yield	0.0633	in/in	
Modulus	754,000	psi	
IZOD Impact vs. Temperature			
Break Type	Partial		
Break Energy	7.83	FtLb/ in	
Break Energy	418.1	J/m	

For further information refer to Lubrizol Advanced Materials processing guides.

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