

## Lubrizol ESTALOC® T5160 Ether-Type, Reinforced Engineering Thermoplastic (European Grade)

Category : Polymer , Thermoplastic , Elastomer, TPE , Polyurethane, TP , Thermoplastic Polyurethane, Elastomer, Glass Filled

### Material Notes:

Description: Estaloc® RETP (Reinforced Engineering Thermoplastic) is a tough, dimensionally stable, abrasion-resistant thermoplastic that withstands demanding environments. Developed as an extension to the Noveon Estane® TPU technology, Estaloc® RETP products complement Estane's durability and aesthetics with increased stiffness capability and dimensional stability over a broad temperature performance range not available from other engineering thermoplastics. Major Benefits of Estaloc® RETPs: Superior Dimensional Stability approaching that of metals Class A surface aesthetics Paintability with no primer nor adhesion promoter Excellent abrasion and scuff/mar resistance Toughness over a broad temperature range Excellent adhesion to a variety of overmolding chemistries Information provided by Noveon, Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Lubrizol-ESTALOC-T5160-Ether-Type-Reinforced-Engineering-Thermoplastic-European-Grade.php](http://www.lookpolymers.com/polymer_Lubrizol-ESTALOC-T5160-Ether-Type-Reinforced-Engineering-Thermoplastic-European-Grade.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.41 g/cc	1.41 g/cc	ISO 1183
Filler Content	30 %	30 %	
Linear Mold Shrinkage	0.0015 cm/cm	0.0015 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	74	74	ISO 868
Tensile Strength, Ultimate	77.0 MPa	11200 psi	ISO 527-2/1A/5
Elongation at Break	15 %	15 %	ISO 527-2/1A/5
Tensile Modulus	3.345 GPa	485.2 ksi	ISO 527-2/1A/1
Flexural Strength	80.0 MPa	11600 psi	ISO 178
Flexural Modulus	3.10 GPa	450 ksi	ISO 178
Izod Impact, Notched (ISO)	19.0 kJ/m <sup>2</sup>	9.04 ft-lb/in <sup>2</sup>	Low Temp; ISO 180/1eA
	37.0 kJ/m <sup>2</sup>	17.6 ft-lb/in <sup>2</sup>	ISO 180/1eA
Izod Impact, Unnotched (ISO)	100 kJ/m <sup>2</sup>	47.6 ft-lb/in <sup>2</sup>	ISO 180/1eU
	83.0 kJ/m <sup>2</sup>	39.5 ft-lb/in <sup>2</sup>	ISO 180/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	12.4 J/cm <sup>2</sup>	59.0 ft-lb/in <sup>2</sup>	ISO 179/1eU
	85.0 J/cm <sup>2</sup>	405 ft-lb/in <sup>2</sup>	

Mechanical Properties	Metric @ Temperature -30.0 °C	English @ Temperature -22.0 °F	ISO 179/1eJ Comments
Charpy Impact, Notched	4.00 J/cm <sup>2</sup>	19.0 ft-lb/in <sup>2</sup>	ISO 179/1eA
	1.50 J/cm <sup>2</sup> @Temperature -30.0 °C	7.14 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	ISO 179/1eA
Taber Abrasion, mg/1000 Cycles	25	25	CS-17 wheel; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear	21.6 μm/m-°C @Temperature 20.0 °C	12.0 μin/in-°F @Temperature 68.0 °F	ASTM D696
Deflection Temperature at 0.46 MPa (66 psi)	166 °C	331 °F	method Bf; ISO 75-2
Deflection Temperature at 1.8 MPa (264 psi)	123 °C	253 °F	method Af; ISO 75-2
Vicat Softening Point	96.0 °C	205 °F	temperature B; ISO 36
	161 °C	322 °F	temperature A; ISO 306

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