

Lubrizol ESTALOC® 59300 Ester-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 **Specific Notes for this Material:** Fiberglass reinforced TPU - industry standard for recreational wheel hubs Information provided by Noveon, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lubrizol-ESTALOC-59300-Ester-Type-Reinforced-Engineering-Thermoplastic-European-Grade.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.45 g/cc	1.45 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	72	72	ISO 868
Tensile Strength, Ultimate	78.0 MPa	11300 psi	ISO 527-2/1A/5
Elongation at Break	15 %	15 %	ISO 527-2/1A/5
Tensile Modulus	3.636 GPa	527.4 ksi	ISO 527-2/1A/1
Flexural Strength	77.0 MPa	11200 psi	ISO 178
Flexural Modulus	3.20 GPa	464 ksi	ISO 178
Izod Impact, Notched (ISO)	17.0 kJ/m ²	8.09 ft-lb/in ²	Low Temp; ISO 180/1eA
	48.0 kJ/m ²	22.8 ft-lb/in ²	ISO 180/1eA
Izod Impact, Unnotched (ISO)	117 kJ/m ²	55.7 ft-lb/in ²	ISO 180/1eU
	73.0 kJ/m ²	34.7 ft-lb/in ²	ISO 180/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	12.2 J/cm ²	58.1 ft-lb/in ²	ISO 179/1eU
	70.0 J/cm ²	333 ft-lb/in ²	

Mechanical Properties	Metric @ Temperature -30.0 °C	English @ Temperature -22.0 °F	ISO 179/1eJ Comments
Charpy Impact, Notched	4.90 J/cm ²	23.3 ft-lb/in ²	ISO 179/1eA
	11.5 J/cm ² @Temperature -30.0 °C	54.7 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
Taber Abrasion, mg/1000 Cycles	20	20	CS-17 wheel; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear	18.0 µm/m-°C @Temperature 20.0 °C	10.0 µin/in-°F @Temperature 68.0 °F	ASTM D696
Deflection Temperature at 0.46 MPa (66 psi)	160 °C	320 °F	method Bf; ISO 75-2
Deflection Temperature at 1.8 MPa (264 psi)	127 °C	261 °F	method Af; ISO 75-2
Vicat Softening Point	116 °C	241 °F	temperature B; ISO 36
	175 °C	347 °F	temperature A; ISO 306

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