

DSM Arnitel® EL550 Polyether Ester Elastomer (European and Asian Grade)

Category : Polymer , Thermoplastic , Elastomer, TPE , Polyester TPE , Polyester, TP , Polyether Ester Elastomer

Material Notes:

Product description: Arnitel® combines the advantages of engineering thermoplastics, being easy to process with excellent mechanical properties, at the same time with the flexibility of rubbers. Arnitel does not require vulcanization. This leads to substantial reductions in part cost. Arnitel can be used over a wide range of temperatures. Arnitel has exceptional fatigue, creep resistance and resistance to oils, greases and many other chemicals. **Characteristics of Arnitel:** Excellent strength over a wide range of temperatures Excellent dynamic properties e.g. creep and fatigue High heat resistance Exceptional resistance to oils and greases Good chemical resistance High degree of versatility in processing Easy coloring using masterbatches Surface quality from high gloss to textured Excellent heat resistance (long term 165°C) Good electrical insulation properties Low moisture absorption, excellent dimensional stability Easy flow, fast cooling times **Typical Applications:** **Automotive:** Arnitel® is extensively used in the automotive industry for applications requiring exceptional fatigue resistance and resistance to oil and greases. Examples are: Rack and Pinion Bellows, Constant Velocity Joint Boots (CVJ Boots), Air brake tubings. **Arnitel in the Electronic and Consumer Goods Industry:** Arnitel® finds enormous potential and is also widely used in consumer electronic companies. **Arnitel® is a good choice for low noise gears** where their exceptional processability without any defects such as flash, makes it the material solution of choice. Arnitel® is also used in highly demanding applications such as in mobile phone antennas. Arnitel® has exceptional flexibility and can perform or even outperform functions that normally require conventional rubbers. Available in a wide range of hardnesses, Arnitel can replace metals, thermoplastics, leather and rubber, often with a reduction in finished part costs. Information provided by DSM.

Order this product through the following link:

http://www.lookpolymers.com/polymer_DSM-Arnitel-EL550-Polyether-Ester-Elastomer-European-and-Asian-Grade.php

Physical Properties	Metric	English	Comments
Density	1.21 g/cc	0.0437 lb/in ³	ISO 1183
Water Absorption	0.65 %	0.65 %	Sim. to ISO 62
Moisture Absorption at Equilibrium	0.20 %	0.20 %	Humidity Absorption; Sim. to ISO 62
Melt Flow	19 g/10 min	19 g/10 min	ISO 1133
	@Load 2.16 kg, Temperature 190 °C	@Load 4.76 lb, Temperature 374 °F	
	37.51 g/10 min	37.51 g/10 min	Calculated from Volume Flow Rate of 31 cm ³ /10min.; ISO 1133
	@Load 2.16 kg, Temperature 230 °C	@Load 4.76 lb, Temperature 446 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	53	53	3s; ISO 868
Tensile Strength at Break	30.0 MPa	4350 psi	ISO 527-1/-2
Tensile Strength, Yield	8.80 MPa	1280 psi	ISO 527-1/-2

Mechanical Properties	@Strain 5.00 % Metric	@Strain 5.00 % English	Comments
	11.8 MPa	1710 psi	ISO 527-1/-2
	@Strain 10.0 %	@Strain 10.0 %	
	12.0 MPa	1740 psi	ISO 527-1/-2
	@Strain 100 %	@Strain 100 %	
	13.8 MPa	2000 psi	ISO 527-1/-2
	@Strain 50.0 %	@Strain 50.0 %	
Elongation at Break	>= 300 %	>= 300 %	ISO 527-1/-2
Elongation at Yield	20 %	20 %	ISO 527-1/-2
Tensile Modulus	0.200 GPa	29.0 ksi	ISO 527-1/-2
Izod Impact, Notched (ISO)	NB	NB	ISO 180/1A
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	NB	NB	ISO 180/4A
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	NB	NB	ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	2.50 J/cm²	11.9 ft-lb/in²	ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Impact Strength	216 kJ/m²	103 ft-lb/in²	notched, 23°C; ISO 8256/1
Graves Tear Strength	115 kN/m	656 pli	without nick; ISO 34

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	150 µm/m-°C	83.3 µin/in-°F	ISO 11359-1/-2
	@Temperature 20.0 °C	@Temperature 68.0 °F	
CTE, linear, Transverse to Flow	150 µm/m-°C	83.3 µin/in-°F	ISO 11359-1/-2
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Melting Point	207 °C	405 °F	10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	110 °C	230 °F	ISO 75-1/-2

Vicat Softening Point Thermal Properties	90.0 °C Metric	194 °F English	50°C/h 50N; ISO 306 Comments
	190 °C	374 °F	50°C/h 10N; ISO 306
Glass Transition Temp, Tg	-64.0 °C	-83.2 °F	Glass Transition Temperature (10°C/min); ISO 11357-1/-2
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	IEC 60695-11-10
Glow Wire Test	750 °C @Thickness 1.00 mm	1380 °F @Thickness 0.0394 in	Glow Wire Flammability Index; IEC 60695-2-12
	750 °C @Thickness 2.00 mm	1380 °F @Thickness 0.0787 in	Glow Wire Flammability Index; IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Dielectric Constant	4.0 @Frequency 1e+6 Hz	4.0 @Frequency 1e+6 Hz	IEC 60250
Dielectric Strength	20.0 kV/mm	508 kV/in	IEC 60243-1
Dissipation Factor	0.040 @Frequency 1e+6 Hz	0.040 @Frequency 1e+6 Hz	IEC 60250
Comparative Tracking Index	600 V	600 V	IEC 60112

Descriptive Properties	Value	Comments
High impact or impact modified	Yes	
Injection molding	Yes	
Without Fillers	Yes	

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