

DSM Arnitel® PL581 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-PL581-Polyether-Ester-Elastomer-European-and-Asian-Grade.php

Physical Properties	Metric	English	Comments
Density	1.23 g/cc	0.0444 lb/in ³	ISO 1183
Water Absorption	2.5 %	2.5 %	Sim. to ISO 62
Moisture Absorption at Equilibrium	0.40 %	0.40 %	Humidity Absorption; Sim. to ISO 62
Melt Flow	13.53 g/10 min @Load 2.16 kg, Temperature 230 °C	13.53 g/10 min @Load 4.76 lb, Temperature 446 °F	Calculated from Volume Flow Rate of 11 cm ³ /10min.; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	55	55	3s; ISO 868
Tensile Strength, Yield	10.0 MPa @Strain 5.00 %	1450 psi @Strain 5.00 %	ISO 527-1/-2
	13.7 MPa @Strain 10.0 %	1990 psi @Strain 10.0 %	ISO 527-1/-2
	16.8 MPa	2440 psi	

Mechanical Properties	Metric	English	ISO 527-1/-2 Comments
	18.5 MPa @Strain 50.0 %	2680 psi @Strain 50.0 %	ISO 527-1/-2
	@Strain 100 %	@Strain 100 %	
Elongation at Break	300 %	300 %	ISO 527-1/-2
Tensile Modulus	0.300 GPa	43.5 ksi	ISO 527-1/-2
Izod Impact, Notched (ISO)	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	ISO 180/1A
Charpy Impact, Notched	1.60 J/cm ² @Temperature -30.0 °C	7.61 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	ISO 179/1eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	110 µm/m-°C @Temperature 20.0 °C	61.1 µin/in-°F @Temperature 68.0 °F	ISO 11359-1/-2
CTE, linear, Transverse to Flow	110 µm/m-°C @Temperature 20.0 °C	61.1 µin/in-°F @Temperature 68.0 °F	ISO 11359-1/-2
Melting Point	218 °C	424 °F	10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	100 °C	212 °F	ISO 75-1/-2
Vicat Softening Point	105 °C	221 °F	50°C/h 50N; ISO 306
	205 °C	401 °F	50°C/h 10N; ISO 306
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	IEC 60695-11-10

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	IEC 60093
Dielectric Constant	4.0 @Frequency 1e+6 Hz	4.0 @Frequency 1e+6 Hz	IEC 60250
Dielectric Strength	21.0 kV/mm	533 kV/in	IEC 60243-1

Electrical Properties	0.040 Metric	0.040 English	Comments
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Comparative Tracking Index	600 V	600 V	IEC 60112

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

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