

DSM Arnitel® PM581 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-PM581-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	4.305 g/10 min @Load 2.16 kg, Temperature 230 °C	4.305 g/10 min @Load 4.76 lb, Temperature 446 °F	Calculated from Volume Flow Rate of 3.5 cm ³ /10min.; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	55	55	3s; ISO 868
Tensile Strength at Break	24.5 MPa	3550 psi	ISO 527-1/-2
Tensile Strength, Yield	9.30 MPa @Strain 5.00 %	1350 psi @Strain 5.00 %	ISO 527-1/-2
	13.1 MPa @Strain 10.0 %	1900 psi @Strain 10.0 %	ISO 527-1/-2

Mechanical Properties	Metric	English	Comments
	17.9 MPa	2600 psi	
	@Strain 50.0 %	@Strain 50.0 %	ISO 527-1/-2
	17.9 MPa	2600 psi	
	@Strain 100 %	@Strain 100 %	ISO 527-1/-2
Elongation at Break	200 %	200 %	ISO 527-1/-2
Tensile Modulus	0.300 GPa	43.5 ksi	ISO 527-1/-2
Izod Impact, Notched (ISO)	NB	NB	
	@Temperature 23.0 °C	@Temperature 73.4 °F	ISO 180/1A
Charpy Impact, Notched	1.60 J/cm²	7.61 ft-lb/in²	
	@Temperature -30.0 °C	@Temperature -22.0 °F	ISO 179/1eA
	NB	NB	
	@Temperature 23.0 °C	@Temperature 73.4 °F	ISO 179/1eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	110 µm/m-°C	61.1 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	ISO 11359-1/-2
CTE, linear, Transverse to Flow	110 µm/m-°C	61.1 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	ISO 11359-1/-2
Melting Point	218 °C	424 °F	10°C/min; ISO 11357-1/-3
Deflection Temperature at 1.8 MPa (264 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	HB	
	@Thickness 1.60 mm	@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+13 ohm	1.00e+13 ohm	IEC 60093
Dielectric Constant	4.4	4.4	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	IEC 60250

Electrical Properties	^{4.7} Metric	^{4.7} English	Comments
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	21.0 kV/mm	533 kV/in	IEC 60243-1
Dissipation Factor	0.031	0.031	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.081	0.081	IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Comparative Tracking Index	600 V	600 V	IEC 60112

Descriptive Properties	Value	Comments
Film Extrusion	Yes	
Heat stabilized or stable to heat	Yes	
High impact or impact modified	Yes	
Other Extrusion	Yes	
Profile extrusion	Yes	
Sheet extrusion	Yes	
Without Fillers	Yes	

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