

DSM Arnitel® PL381 Injection Molding Grade Copolyester Elastomer (North America)

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

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.

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-PL381-Injection-Molding-Grade-Copolyester-Elastomer-North-America.php

Physical Properties	Metric	English	Comments
Density	1.16 g/cc	0.0419 lb/in ³	ISO 1183
Water Absorption	7.0 %	7.0 %	Sim. to ISO 62
Moisture Absorption at Equilibrium	0.40 %	0.40 %	Humidity Absorption; Sim. to ISO 62
Melt Flow	32.48 g/10 min @Load 2.16 kg, Temperature 230 °C	32.48 g/10 min @Load 4.76 lb, Temperature 446 °F	Calculated from Volume Flow Rate of 28 cm ³ /10 min; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	33	33	3 s; ISO 868
Tensile Strength at Break	14.0 MPa	2030 psi	ISO 527-1/-2
Tensile Strength, Yield	2.60 MPa @Strain 5.00 %	377 psi @Strain 5.00 %	ISO 527-1/-2
	4.20 MPa	609 psi	

Mechanical Properties	Metric	English	ISO 527-1/-2 Comments
	7.10 MPa	1030 psi	ISO 527-1/-2
	@Strain 50.0 %	@Strain 50.0 %	
	8.40 MPa	1220 psi	ISO 527-1/-2
	@Strain 100 %	@Strain 100 %	
Elongation at Break	450 %	450 %	ISO 527-1/-2
Tensile Modulus	0.0600 GPa	8.70 ksi	ISO 527-1/-2
Izod Impact, Notched (ISO)	NB	NB	ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180/1A
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	NB	NB	ISO 180/1A
	@Temperature -20.0 °C	@Temperature -4.00 °F	
Charpy Impact, Notched	NB	NB	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	179 kJ/m ²	85.2 ft-lb/in ²	23°C; ISO 8256/1

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	212 °C	414 °F	10°C/min; ISO 11357-1/-3
Flammability, UL94	HB	HB	IEC 60695-11-10
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 60093
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	IEC 60093

Electrical Properties	Metric	English	Comments
Dielectric Constant			IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	4.7	4.7	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	20.0 kV/mm	508 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
High impact or impact modified	Yes	
Injection molding	Yes	
Without Fillers	Yes	

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