

DSM Arnitel® EM460 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-EM460-Polyether-Ester-Elastomer-European-and-Asian-Grade.php

Physical Properties	Metric	English	Comments
Density	1.16 g/cc	0.0419 lb/in ³	ISO 1183
Water Absorption	0.70 %	0.70 %	Sim. to ISO 62
Moisture Absorption at Equilibrium	0.30 %	0.30 %	Humidity Absorption; Sim. to ISO 62
Melt Flow	33 g/10 min	33 g/10 min	ISO 1133
	@Load 2.16 kg, Temperature 190 °C	@Load 4.76 lb, Temperature 374 °F	
	58 g/10 min	58 g/10 min	Calculated from Volume Flow Rate of 50 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	41	41	3s; ISO 868
Tensile Strength at Break	25.0 MPa	3630 psi	ISO 527-1/-2
Tensile Strength, Yield	3.90 MPa	566 psi	ISO 527-1/-2

Mechanical Properties	@Strain 5.00 % Metric	@Strain 5.00 % English	Comments
	6.10 MPa	885 psi	ISO 527-1/-2
	@Strain 10.0 %	@Strain 10.0 %	
	8.80 MPa	1280 psi	ISO 527-1/-2
	@Strain 50.0 %	@Strain 50.0 %	
	10.0 MPa	1450 psi	ISO 527-1/-2
	@Strain 100 %	@Strain 100 %	
Elongation at Break	>= 300 %	>= 300 %	ISO 527-1/-2
Elongation at Yield	30 %	30 %	ISO 527-1/-2
Tensile Modulus	0.100 GPa	14.5 ksi	ISO 527-1/-2
Izod Impact, Notched (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	
	NB	NB	ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °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	187 kJ/m ²	89.0 ft-lb/in ²	notched, 23°C; ISO 8256/1
Graves Tear Strength	75.0 kN/m	428 pli	without nick; ISO 34

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	160 µm/m-°C	88.9 µin/in-°F	ISO 11359-1/-2
	@Temperature 20.0 °C	@Temperature 68.0 °F	
CTE, linear, Transverse to Flow	160 µm/m-°C	88.9 µin/in-°F	ISO 11359-1/-2
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Melting Point	185 °C	365 °F	10°C/min; ISO 11357-1/-3
Vicat Softening Point	50.0 °C	122 °F	50°C/h 50N; ISO 306
	150 °C	302 °F	50°C/h 10N; ISO 306

Thermal Properties	Metric	English	Comments
Flammability, UL94	@Thickness 1.60 mm	@Thickness 0.0630 in	IEC 60695-11-10

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	IEC 60093
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	IEC 60093
Dielectric Constant	4.4	4.4	IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	20.0 kV/mm	508 kV/in	IEC 60243-1
Dissipation Factor	0.035	0.035	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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