

Topas Advanced Polymers TOPAS® Elastomer E-140 Developmental Cyclic Olefin Copolymer (COC)

Category : Polymer , Thermoplastic , Cyclo Olefin Polymer

Material Notes:

TOPAS® Elastomer E-140, unlike most TOPAS grades, is a semicrystalline cyclic olefin material with flexibility. It is a fairly stiff elastomer which can be extruded and injection molded, and can be blended with other TOPAS grades, olefin resins and elastomers. For an elastomer, E-140 features high moisture barrier and has moderate clarity in thin sections or films. Secondary Tg of -6°C is relatively insignificant in terms of E-140 properties such as low temperature brittleness. Primary Tg is below -90°C, while the melting point is about 84°C. Key applications and attributes: High toughness film (as COC blend): Toughness, clarity, stiffness, low WVTR, reclaimability Tubing: Purity, kink resistance Bags: Purity, olefin compatibility Over-molding: Adhesion to olefins, purity, soft feel Food packaging: Not manufactured with BPA, phthalates, or halogens Food contact: Broad regulatory approval Note: 125µm film data includes 1% Ampacet 102765 1.5:1
BURInformation provided by TOPAS Advanced Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_Topas-Advanced-Polymers-TOPAS-Elastomer-E-140-Developmental-Cyclic-Olefin-Copolymer-COC.php

Physical Properties	Metric	English	Comments
Oxygen Permeability	4240 cm ³ mil/(m ² day atm) @Temperature 23.0 °C	274 cm ³ mil/(100 in ² day atm) @Temperature 73.4 °F	50% RH; ISO 15105-2
Water Vapor Permeability	18.4 g mil/ (m ² day) @Temperature 38.0 °C	1.19 g mil/ (100 in ² day) @Temperature 100 °F	90% RH; ISO 15106-3
Density	0.940 g/cc	0.0340 lb/in ³	ISO 1183
Thickness	127 microns	5.00 mil	
Melt Flow	2.7 g/10 min @Load 2.16 kg, Temperature 190 °C	2.7 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133
	11 g/10 min @Load 2.16 kg, Temperature 260 °C	11 g/10 min @Load 4.76 lb, Temperature 500 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Stress	50.4 MPa @Thickness 0.0500 mm	7310 psi @Thickness 0.00197 in	TD, Break; ASTM D882
	50.6 MPa	7340 psi	TD, Break; ASTM D882

Mechanical Properties	@Thickness 0.125 mm Metric	@Thickness 0.00492 in English	Comments
	52.0 MPa	7540 psi	MD, Break; ASTM D882
	@Thickness 0.125 mm	@Thickness 0.00492 in	
	60.7 MPa	8800 psi	MD, Break; ASTM D882
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
Film Elongation at Break, MD	640 %	640 %	ASTM D882
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
	800 %	800 %	ASTM D882
	@Thickness 0.125 mm	@Thickness 0.00492 in	
Film Elongation at Break, TD	620 %	620 %	ASTM D882
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
	790 %	790 %	ASTM D882
	@Thickness 0.125 mm	@Thickness 0.00492 in	
Tensile Modulus	0.0340 GPa	4.93 ksi	TD; ASTM D882
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
	0.0363 GPa	5.26 ksi	MD; ASTM D882
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
	0.0501 GPa	7.26 ksi	MD; ASTM D882
	@Thickness 0.125 mm	@Thickness 0.00492 in	
	0.0527 GPa	7.65 ksi	TD; ASTM D882
	@Thickness 0.125 mm	@Thickness 0.00492 in	
Elmendorf Tear Strength MD	1103 g	1103 g	ASTM D1922
	@Load 3.20 kg, Thickness 0.0500 mm	@Load 7.06 lb, Thickness 0.00197 in	
	2718 g	2718 g	ASTM D1922
	@Load 0.00326 kg, Thickness 3.17 mm	@Load 0.00704 lb, Thickness 0.125 in	
Elmendorf Tear Strength TD	1221 g	1221 g	ASTM D1922
	@Load 3.20 kg, Thickness 0.0500 mm	@Load 7.06 lb, Thickness 0.00197 in	

Mechanical Properties	3171 g Metric	3171 g English	Comments
	@Load 0.00326 kg, Thickness 0.125 mm	@Load 0.00704 lb, Thickness 0.00492 in	

Thermal Properties	Metric	English	Comments
Vicat Softening Point	64.0 °C	147 °F	VST/A50; ISO 306
Brittleness Temperature	<= 90.0 °C	<= 194 °F	ISO 974

Optical Properties	Metric	English	Comments
Haze	1.27 %	1.27 %	ASTM D1003
	@Thickness 0.125 mm	@Thickness 0.00492 in	
	1.5 %	1.5 %	ASTM D1003
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
Gloss	94 %	94 %	60°; ASTM D2457
	@Thickness 0.0500 mm	@Thickness 0.00197 in	
	116 %	116 %	60°; ASTM D2457
	@Thickness 0.125 mm	@Thickness 0.00492 in	

Electrical Properties	Metric	English	Comments
Dielectric Constant	2.24	2.24	ASTM D2520B
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
Dielectric Strength	157 kV/mm	4000 kV/in	ASTM D149-97a
Dissipation Factor	0.00026	0.00026	ASTM D2520B
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	

Processing Properties	Metric	English	Comments
Melt Temperature	84.0 °C	183 °F	Internal Method

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