

Eastman Eastman AP007 Copolyester

Category : Polymer , Thermoplastic , Polyester, TP

Material Notes:

Applications:Automotive componentsBreathable filmsElectronic componentsFilm ModificationFlexible hingesHose mandrelIndustrial componentsOffice furniturePackagingPolymer modificationProfilesRubber and plastic modificationSporting goodsThermoplastic elastomer compoundsTubing

Key Attributes:Environmentally preferred, non-halogenated materialExcellent chemical and oil resistanceExcellent compatibility with a wide range of polymersExceptional heat resistance and high temperature dimensional stabilityHigh energy absorptionHigh flexibility without plasticizersMelt bondable to a variety of substrates, including PVCOutstanding toughness and puncture resistanceSolvent bondable

Product Description: Eastman AP007 is a tough, clear, durable copolyester ether that combines the strength of plastics, the flexibility of elastomers, and the processability of thermoplastics. Eastman AP007 can be used in injection molding and film or tubing extrusion applications or in any application that demands strength, durability, chemical resistance, and puncture resistance in harsh environments. This copolyester combines toughness, clarity, high temperature resistance and flexibility without the addition of plasticizers. Eastman AP007 is considered environmentally preferred because of its non-halogenated material composition. Its broad compatibility with other polymers such as styrenic block copolymers makes it an excellent choice for both alloys and as additives/modifiers to improve performance properties. Information provided by Eastman.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Eastman-Eastman-AP007-Copolyester.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.13 g/cc	1.13 g/cc	ASTM D792
Water Absorption	0.40 % @Time 86400 sec	0.40 % @Time 24.0 hour	Immersion; ASTM D570
Water Vapor Transmission	146 g/m ² /day	9.40 g/100 in ² /day	ASTM F372
Oxygen Transmission Rate	940 cc/m ² /day @Pressure 0.101 MPa, Temperature 30.0 °C	60.5 cc/100 in ² /day @Pressure 14.7 psi, Temperature 86.0 °F	ASTM D1434
Viscosity Measurement	1.23	1.23	Inherent; EMN-A-AC-G-V-1
Thickness	130 microns	5.12 mil	
Melt Flow	4.0 g/10 min @Load 2.16 kg, Temperature 230 °C	4.0 g/10 min @Load 4.76 lb, Temperature 446 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	95	95	ASTM D2240
Hardness, Shore D	55	55	ASTM D2240

Tensile Strength at Break Mechanical Properties	23.0 MPa Metric	3340 psi English	ASTM D638 Comments
Film Tensile Strength at Yield, TD	11.2 MPa	1620 psi	ASTM D882
Tensile Strength, Yield	13.0 MPa	1890 psi	ASTM D638
Film Elongation at Break, MD	330 %	330 %	ASTM D882
Film Elongation at Break, TD	>= 550 %	>= 550 %	ASTM D882
Film Elongation at Yield, MD	46 %	46 %	ASTM D882
Film Elongation at Yield, TD	20 %	20 %	ASTM D882
Elongation at Break	400 %	400 %	ASTM D638
Elongation at Yield	38 %	38 %	ASTM D638
Tensile Modulus	0.170 GPa	24.7 ksi	ASTM D638
Flexural Modulus	0.150 GPa	21.8 ksi	ASTM D790
Izod Impact, Notched	0.400 J/cm @Temperature -40.0 °C	0.749 ft-lb/in @Temperature -40.0 °F	ASTM D256
Coefficient of Friction	>= 1.0	>= 1.0	ASTM D1894
Tear Strength, Total	350 N	78.7 lb (f)	ASTM D1004
Film Tensile Strength at Break, MD	41.5 MPa	6020 psi	ASTM D882
Film Tensile Strength at Break, TD	18.1 MPa	2630 psi	ASTM D882
Tangent Modulus	197 MPa	28600 psi	M.D.; ASTM D882
	221 MPa	32100 psi	T.D.; ASTM D882
Torsional Stiffness	240 MPa @Temperature -28.0 °C	34800 psi @Temperature -18.4 °F	ASTM D1043
	930 MPa @Temperature <=-70.0 °C	135000 psi @Temperature <=-94.0 °F	ASTM D1043

Thermal Properties	Metric	English	Comments
Heat of Fusion	27.0 J/g	11.6 BTU/lb	ASTM E793
CTE, linear	150 µm/m-°C	83.3 µin/in-°F	ASTM D696
Specific Heat Capacity	1.60 J/g-°C @Temperature 25.0 °C	0.382 BTU/lb-°F @Temperature 77.0 °F	solid; DSC

Thermal Properties	Metric °C	English °F	Comments
	@Temperature 100 °C	@Temperature 212 °F	solid; DSC
	2.00 J/g-°C	0.478 BTU/lb-°F	solid; DSC
	@Temperature 150 °C	@Temperature 302 °F	
	2.30 J/g-°C	0.550 BTU/lb-°F	solid; DSC
	@Temperature 175 °C	@Temperature 347 °F	
	2.30 J/g-°C	0.550 BTU/lb-°F	melt; DSC
	@Temperature 225 °C	@Temperature 437 °F	
	3.10 J/g-°C	0.741 BTU/lb-°F	transition; DSC
	@Temperature 200 °C	@Temperature 392 °F	
Thermal Conductivity	0.190 W/m-K	1.32 BTU-in/hr-ft ² -°F	ASTM C177
Melting Point	205 °C	401 °F	Crystalline Peak; ASTM D3418
Crystallization Temperature	140 °C	284 °F	DSC
Vicat Softening Point	170 °C	338 °F	ASTM D1525
	@Load 1.00 kg	@Load 2.20 lb	
Brittleness Temperature	<= -75.0 °C	<= -103 °F	ASTM D746
Glass Transition Temp, Tg	-3.00 °C	26.6 °F	DSC

Optical Properties	Metric	English	Comments
Refractive Index	1.51	1.51	n_D; ASTM D542
Haze	1.0 %	1.0 %	for Film; ASTM D1003
Gloss	73 %	73 %	for Film, 45°; ASTM D2457
Transmission, Visible	91 %	91 %	Regular, Film; ASTM D1003
	@Thickness 0.130 mm	@Thickness 0.00512 in	
	94 %	94 %	Total, Film; ASTM D1003
	@Thickness 0.130 mm	@Thickness 0.00512 in	

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