

Eastman Tritan FX200 Copolyester

Category : Polymer , Thermoplastic , Polyester, TP , Polyester Film

Material Notes:

Eastman Tritan FX200 is an amorphous copolyester that combines clarity and toughness with heat and chemical resistance. Films manufactured from this new-generation copolyester can be thermoformed without pre-drying and with a wide processing window that allows for product designs that reflect intricate detail. Application/Uses Consumer and durable goods Graphic arts Leisure and safety Specialty films Key Attributes Does not contain Bisphenol-A (BPA) Does not contain plasticizers Excellent clarity Very good heat resistance No pre-drying of film prior to thermoforming Good chemical resistance Good toughness Wide thermoforming window Information was provided by Eastman.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Eastman-Tritan-FX200-Copolyester.php

Physical Properties	Metric	English	Comments
Density	1.19 g/cc	0.0430 lb/in ³	ASTM D1505
Water Absorption	0.50 %	0.50 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Water Vapor Transmission	4.00 g/m ² /day	0.258 g/100 in ² /day	ASTM F1249
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Oxygen Transmission	10.0 g/m ² /day	0.644 g/100 in ² /day	ASTM F1249
	@Temperature 38.0 °C	@Temperature 100 °F	
Carbon Dioxide Transmission	44.0 cc-mm/m ² -24hr-atm	112 cc-mil/100 in ² -24hr-atm	ASTM D3985
Thickness	254 microns	10.0 mil	Thickness of film tested; ASTM D374
Surface Tension	211 cc-mm/m ² -24hr-atm	536 cc-mil/100 in ² -24hr-atm	ASTM D1434
	8.0 dynes/cm	8.0 dynes/cm	Polar; ASTM D5946
	39 dynes/cm	39 dynes/cm	Dispersive; ASTM D5946
	47 dynes/cm	47 dynes/cm	Total; ASTM D5946

Mechanical Properties	Metric	English	Comments
Film Tensile Strength at Yield, MD	43.0 MPa	6240 psi	ASTM D882
Film Tensile Strength at Yield, TD	41.0 MPa	5950 psi	ASTM D882
Film Elongation at Break, MD	114 %	114 %	ASTM D882
Film Elongation at Break, TD	115 %	115 %	ASTM D882

Mechanical Properties	Metric	English	Comments
Film Elongation at Yield, MD	8.0 %	8.0 %	ASTM D882
Film Elongation at Yield, TD	8.0 %	8.0 %	ASTM D882
Secant Modulus, MD	1.50 GPa	218 ksi	Tangent; ASTM D882
Secant Modulus, TD	1.40 GPa	203 ksi	Tangent; ASTM D882
Puncture Energy	4.50 J	3.32 ft-lb	Dynatup; ASTM D3763
Tear Strength	9.00 kN/m	51.4 pli	TD; Trouser @200/mm/min; ISO 6383-1
	9.00 kN/m	51.4 pli	Split tear method, TD; ASTM D1938
	10.0 kN/m	57.1 pli	MD; Trouser @200/mm/min; ISO 6383-1
	10.0 kN/m	57.1 pli	Split tear method, MD; ASTM D1938
Elmendorf Tear Strength MD	377 g	377 g	ASTM D1922
Elmendorf Tear Strength TD	428 g	428 g	ASTM D1922
Elmendorf Tear Strength, MD	1.50 g/micron	38.1 g/mil	ASTM D1922
Elmendorf Tear Strength, TD	1.70 g/micron	43.2 g/mil	ASTM D1922
Dart Drop	3.20 g/micron	81.3 g/mil	ASTM 1709A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	3.20 g/micron	81.3 g/mil	ASTM 1709A
	@Temperature -18.0 °C	@Temperature -0.400 °F	
	3.20 g/micron	81.3 g/mil	ASTM 1709A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop Test	825 g	1.82 lb	ASTM 1709A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	825 g	1.82 lb	ASTM 1709A
	@Temperature -18.0 °C	@Temperature -0.400 °F	
	852 g	1.88 lb	ASTM 1709A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Film Tensile Strength at Break, MD	57.0 MPa	8270 psi	ASTM D882
Film Tensile Strength at Break, TD	42.0 MPa	6090 psi	ASTM D882

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
Specific Heat Capacity	1.76 $\text{J}/\text{g}\cdot^{\circ}\text{C}$	0.420 $\text{BTU}/\text{lb}\cdot^{\circ}\text{F}$	DSC
	@Temperature 60.0 $^{\circ}\text{C}$	@Temperature 140 $^{\circ}\text{F}$	
	1.92 $\text{J}/\text{g}\cdot^{\circ}\text{C}$	0.460 $\text{BTU}/\text{lb}\cdot^{\circ}\text{F}$	DSC
	@Temperature 100 $^{\circ}\text{C}$	@Temperature 212 $^{\circ}\text{F}$	
	2.26 $\text{J}/\text{g}\cdot^{\circ}\text{C}$	0.540 $\text{BTU}/\text{lb}\cdot^{\circ}\text{F}$	DSC
@Temperature 150 $^{\circ}\text{C}$	@Temperature 302 $^{\circ}\text{F}$		
2.43 $\text{J}/\text{g}\cdot^{\circ}\text{C}$	@Temperature 200 $^{\circ}\text{C}$	0.580 $\text{BTU}/\text{lb}\cdot^{\circ}\text{F}$	DSC
		@Temperature 392 $^{\circ}\text{F}$	
2.59 $\text{J}/\text{g}\cdot^{\circ}\text{C}$	@Temperature 250 $^{\circ}\text{C}$	0.620 $\text{BTU}/\text{lb}\cdot^{\circ}\text{F}$	DSC
		@Temperature 482 $^{\circ}\text{F}$	
Glass Transition Temp, Tg	119 $^{\circ}\text{C}$	246 $^{\circ}\text{F}$	DSC

Optical Properties	Metric	English	Comments
Refractive Index	1.54	1.54	ASTM D542
Haze	0.80 %	0.80 %	ASTM D1003
Gloss	158 %	158 %	@ 60°; ASTM D2457
Yellow Index	0.50 %	0.50 %	ASTM D1925
Transmission, Visible	93 %	93 %	ASTM D1003
UV Transmittance	89 %	89 %	UV/Vis Spectro
	@Thickness 0.380 mm	@Thickness 0.0150 in	

Compliance Properties	Metric	English	Comments
FDA	Yes	Yes	Repeated use food contact articles
NSF	Yes	Yes	Food equipment materials; NSF/ANSI Standard 51

Descriptive Properties	Value	Comments
PPT Tear Resistance, M.D.	40 N	ASTM D2582
PPT Tear Resistance, T.D.	40 N	ASTM D2582
Taber Abrasion	20% haze	ASTM 1044, Average at 25 cycles

Descriptive Properties	Value	Comments
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