

## Eastman Tritan FX100 Copolyester

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

### Material Notes:

Eastman Tritan FX100 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 Good heat resistance No pre-drying of film prior to thermoforming Outstanding 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-FX100-Copolyester.php](http://www.lookpolymers.com/polymer_Eastman-Tritan-FX100-Copolyester.php)

Physical Properties	Metric	English	Comments
Density	1.19 g/cc	0.0430 lb/in <sup>3</sup>	ASTM D1505
Water Absorption	0.50 %	0.50 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Water Vapor Transmission	4.00 g/m <sup>2</sup> /day	0.258 g/100 in <sup>2</sup> /day	ASTM F1249
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Oxygen Transmission	11.0 g/m <sup>2</sup> /day	0.708 g/100 in <sup>2</sup> /day	ASTM F1249
	@Temperature 38.0 °C	@Temperature 100 °F	
Carbon Dioxide Transmission	32.0 cc-mm/m <sup>2</sup> -24hr-atm	81.3 cc-mil/100 in <sup>2</sup> -24hr-atm	ASTM D3985
Thickness	149 cc-mm/m <sup>2</sup> -24hr-atm	378 cc-mil/100 in <sup>2</sup> -24hr-atm	ASTM D1434
Surface Tension	254 microns	10.0 mil	Thickness of film tested; ASTM D374
	8.0 dynes/cm	8.0 dynes/cm	Polar; ASTM D5946
	39 dynes/cm	39 dynes/cm	Dispersive; ASTM D5946
	46 dynes/cm	46 dynes/cm	Total; ASTM D5946

Mechanical Properties	Metric	English	Comments
Film Tensile Strength at Yield, MD	41.0 MPa	5950 psi	ASTM D882
Film Tensile Strength at Yield, TD	40.0 MPa	5800 psi	ASTM D882
Film Elongation at Break, MD	179 %	179 %	ASTM D882
Film Elongation at Break, TD	203 %	203 %	ASTM D882

Mechanical Properties	Metric	English	Comments
Film Elongation at Yield, MD	7.0 %	7.0 %	ASTM D882
Film Elongation at Yield, TD	7.0 %	7.0 %	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	4.60 J	3.39 ft-lb	Dynatup; ASTM D3763
Tear Strength	11.0 kN/m	62.8 pli	MD; Trouser @200/mm/min; ISO 6383-1
	11.0 kN/m	62.8 pli	TD; Trouser @200/mm/min; ISO 6383-1
	12.0 kN/m	68.5 pli	Split tear method, TD; ASTM D1938
	13.0 kN/m	74.2 pli	Split tear method, MD; ASTM D1938
Elmendorf Tear Strength MD	520 g	520 g	ASTM D1922
Elmendorf Tear Strength TD	571 g	571 g	ASTM D1922
Elmendorf Tear Strength, MD	2.00 g/micron	50.8 g/mil	ASTM D1922
Elmendorf Tear Strength, TD	2.20 g/micron	55.9 g/mil	ASTM D1922
Dart Drop	3.50 g/micron	88.9 g/mil	ASTM 1709A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dart Drop	3.60 g/micron	91.4 g/mil	ASTM 1709A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop Test	882 g	1.94 lb	ASTM 1709A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dart Drop Test	913 g	2.01 lb	ASTM 1709A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Film Tensile Strength at Break, MD	59.0 MPa	8560 psi	ASTM D882
Film Tensile Strength at Break, TD	52.0 MPa	7540 psi	ASTM D882

Thermal Properties	Metric	English	Comments
CTE, linear	90.0 µm/m-°C	50.0 µin/in-°F	ASTM D696
Specific Heat Capacity	1.72 J/g-°C	0.410 BTU/lb-°F	DSC
	@Temperature 60.0 °C	@Temperature 140 °F	

Thermal Properties	Metric	English	Comments
	1.88 J/g-°C	0.450 BTU/lb-°F	
	@Temperature 100 °C	@Temperature 212 °F	
	2.26 J/g-°C	0.540 BTU/lb-°F	DSC
	@Temperature 150 °C	@Temperature 302 °F	
	2.43 J/g-°C	0.580 BTU/lb-°F	DSC
	@Temperature 200 °C	@Temperature 392 °F	
	2.59 J/g-°C	0.620 BTU/lb-°F	DSC
	@Temperature 250 °C	@Temperature 482 °F	
Glass Transition Temp, Tg	110 °C	230 °F	DSC

Optical Properties	Metric	English	Comments
Refractive Index	1.55	1.55	ASTM D542
Haze	0.70 %	0.70 %	ASTM D1003
Gloss	161 %	161 %	@ 60°; ASTM D2457
Yellow Index	0.50 %	0.50 %	ASTM D1925
Transmission, Visible	92 %	92 %	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.	42 N	ASTM D2582
PPT Tear Resistance, T.D.	56 N	ASTM D2582
Taber Abrasion	23% haze	ASTM 1044, Average at 25 cycles

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