

Eastman Embrace LV Copolyester for Shrink Film

Category : Polymer , Film , Thermoplastic , Polyester , TP

Material Notes:

Applications: Beverage packaging Dairy packaging Food packaging Juice packaging Pharmaceutical packaging Soft drink packaging Key Attributes: Customizable shrink curve Eye-catching 360° graphic capability Lower Shrink force than Embrace Sparkling clarity and high gloss Super-high print definition Ultimate shrinkage of >70% Product Description: LV stands for LOW shrink force and VERSATILE shrink curve. Under normal extruder manufacturing conditions, this product maintains the same shrink characteristics expected from Eastman Embrace but has a 30% lower shrink force. Living up to its name, it demonstrates its versatility with its ability to be produced with up to a 40% reduction in shrink force versus the first generation Eastman Embrace copolyester with a shrink curve that is similar to both PVC and OPS while still maintaining ultimate shrinkage well above 70%. This versatility, not before possible with Eastman Embrace, is achieved by making changes to the extruders manufacturing process. Eastman Embrace LV emulates all visually satisfying attributes expected from the current Eastman Embrace such as high gloss and clarity. This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®. This Product has been CRADLE TO CRADLE CERTIFIEDcm Silver. Information provided by Eastman.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Eastman-Embrace-LV-Copolyester-for-Shrink-Film.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in ³	ASTM D1505
Water Vapor Transmission	25.0 g/m ² /day	1.61 g/100 in ² /day	ASTM F1249
Oxygen Transmission	3.90 cc-mm/m ² -24hr-atm @Temperature 30.0 °C	9.91 cc-mil/100 in ² -24hr-atm @Temperature 86.0 °F	ASTM D3985
Viscosity Measurement	0.70	0.70	Inherent; EMN-A-AC-G-V-1
Thickness	50.0 microns	1.97 mil	
Surface Tension	3.0 dynes/cm	3.0 dynes/cm	Harmonic Mean - Polar
	44 dynes/cm	44 dynes/cm	Harmonic Mean - Dispersive
	48 dynes/cm	48 dynes/cm	Harmonic Mean - Total

Mechanical Properties	Metric	English	Comments
Film Tensile Strength at Yield, MD	43.0 MPa	6240 psi	ASTM D882
Film Tensile Strength at Yield, TD	105 MPa	15200 psi	ASTM D882
Film Elongation at Break, MD	480 %	480 %	ASTM D882
Film Elongation at Break, TD	42 %	42 %	ASTM D882
Film Elongation at Yield, MD	3.0 %	3.0 %	ASTM D882

Mechanical Properties	Metric	English	Comments
Tensile Modulus	2.00 GPa	290 ksi	Film M.D.; ASTM D882
	5.30 GPa	769 ksi	Film T.D.; ASTM D882
Tear Strength, Total	2.40 N	0.540 lb (f)	M.D., Elmendorf; ASTM D1922
Tear Strength	3.00 kN/m	17.1 pli	T.D., Split Tear @ 254 mm/min; ASTM D1938
	28.0 kN/m	160 pli	M.D., Split Tear @ 254 mm/min; ASTM D1938
Film Tensile Strength at Break, MD	49.0 MPa	7110 psi	ASTM D882
Film Tensile Strength at Break, TD	258 MPa	37400 psi	ASTM D882

Thermal Properties	Metric	English	Comments
Vicat Softening Point	69.0 °C	156 °F	ASTM D1525
Glass Transition Temp, Tg	69.0 °C	156 °F	ASTM D1525
Shrinkage	78 % @Temperature 90.0 °C	78 % @Temperature 194 °F	

Optical Properties	Metric	English	Comments
Haze	3.8 %	3.8 %	ASTM D1003
Gloss	110 %	110 %	at 60°; ASTM D2457
Transmission, Visible	87 % @Thickness 0.250 mm	87 % @Thickness 0.00984 in	Regular, Film; ASTM D1003
	92 % @Thickness 0.250 mm	92 % @Thickness 0.00984 in	Total, Film; ASTM D1003
	98 % @Thickness 0.250 mm	98 % @Thickness 0.00984 in	Transparency, Film; ASTM D1746

Descriptive Properties	Value	Comments
Color	0.02	a*, ASTM D2244
	0.38	b*, ASTM D2244
	95.8	L*, ASTM D2244

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