

Eastman DuraStar DS1000 Polymer, Natural

Category : Polymer , Thermoplastic , Polyester, TP , Polycyclohexylenedimethylene Terephthalate (PCT) , Glycol-Modified PCT (PCTG) Copolyester

Material Notes:

Durastar DS1000 polymer has excellent appearance and clarity. Its most outstanding features are chemical resistance and excellent processing characteristics. Exposure to aromatic oils often causes crazing or actual fracture of many polymer resins, but DS1000 maintains its physical properties when exposed to these oils, and its appearance is virtually unchanged. Easy to process, it flows readily, fills intricate molds, and is well suited for thick-wall applications. Under existing United States Food and Drug Administration (FDA) regulations, Durastar DS1000 may be used in food contact articles which comply with the specifications and conditions of use in 21 CFR 177.1240. Applications/Uses Floor care Housewares Toys/Sporting goods Furniture/Furniture trim Point of purchase displays Writing instruments Key Attributes Good chemical resistance Excellent flow Outstanding impact resistance Excellent clarity Fast drying times Quick cycle times

Order this product through the following link:

http://www.lookpolymers.com/polymer_Eastman-DuraStar-DS1000-Polymer-Natural.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in ³	ISO 1183
Linear Mold Shrinkage	0.0020 - 0.0060 cm/cm @Thickness 3.20 mm	0.0020 - 0.0060 in/in @Thickness 0.126 in	ASTM D955

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	103	103	ASTM D785
Tensile Strength at Break	46.0 MPa	6670 psi	ISO 527
	51.0 MPa	7400 psi	ASTM D638
Tensile Strength, Yield	47.0 MPa	6820 psi	ASTM D638
	47.0 MPa	6820 psi	ISO 527
Elongation at Break	200 %	200 %	ISO 527
	300 %	300 %	ASTM D638
Elongation at Yield	4.0 %	4.0 %	ISO 527
	5.0 %	5.0 %	ASTM D638
Tensile Modulus	1.80 GPa	261 ksi	ISO 527
Flexural Strength	65.0 MPa	9430 psi	ISO 178

Flexural Yield Strength Mechanical Properties	69.0 MPa Metric	10000 psi English	ASTM D790 Comments
Flexural Modulus	1.85 GPa	268 ksi	ISO 178
	2.00 GPa	290 ksi	ASTM D790
Izod Impact, Notched	0.400 J/cm	0.749 ft-lb/in	ASTM D256
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	0.800 J/cm	1.50 ft-lb/in	ASTM D256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched	NB	NB	ASTM D4812
	NB	NB	ASTM D4812
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	4.80 kJ/m ²	2.28 ft-lb/in ²	ISO 180
Izod Impact, Notched (ISO)	@Temperature -40.0 °C	@Temperature -40.0 °F	
	7.80 kJ/m ²	3.71 ft-lb/in ²	ISO 180
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	Puncture Energy	42.0 J	31.0 ft-lb
	58.7 J	43.3 ft-lb	Puncture Resistance @ max load, 23°C; ISO 6603-2
	48.0 J	35.4 ft-lb	Puncture Resistance at Max Load; ASTM D3763
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	52.6 J	38.8 ft-lb	Puncture Resistance at Max Load; ISO 6603-2
	@Temperature -40.0 °C	@Temperature -40.0 °F	

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	72.0 °C	162 °F	ISO 75
	75.0 °C	167 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	65.0 °C	149 °F	ASTM D648
	66.0 °C	151 °F	ISO 75
Flammability, UL94	HB	HB	
	@Thickness 1.50 mm	@Thickness 0.0591 in	

Optical Properties	Metric	English	Comments
Haze	0.30 %	0.30 %	ASTM D1003
Transmission, Visible	89 %	89 %	Regular Transmittance; ASTM D1003
	91 %	91 %	Total Transmittance; ASTM D1003

Processing Properties	Metric	English	Comments
Melt Temperature	230 - 280 °C	446 - 536 °F	
Mold Temperature	15.0 - 30.0 °C	59.0 - 86.0 °F	
Drying Temperature	70.0 °C	158 °F	
Dry Time	3 hour	3 hour	

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