Eastman DuraStar DS2000 Polymer, Natural

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

Material Notes:

Durastar DS2000 polymer has excellent appearance and is nearly water-clear. Its most outstanding features are toughness, chemical resistance, and excellent processing characteristics. DS2000 has very good toughness as shown by Izod impact resistance. Exposure to aromatic oils often causes crazing or actual fracture of many polymer resins, but DS2000 maintains its physical properties when exposed to these oils, and its appearance is virtually unchanged. Easy to process, it flows readily and fills intricate molds. Under existing United States Food and Drug Administration (FDA) regulations, Durastar DS2000 may be used in food contact articles which comply with the specifications and conditions of use in 21 CFR 177.1240.Applications/UsesPoint of purchase displaysToys/Sporting goodsWriting instrumentsKey AttributesGood chemical resistanceExcellent flowOutstanding impact resistanceExcellent clarityFast drying timesQuick cycle times

Order this product through the following link:
http://www.lookpolymers.com/polymer_Eastman-DuraStar-DS2000-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/in³	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	105	105	ASTM D785
Tensile Strength at Break	49.0 MPa	7110 psi	ISO 527
	53.0 MPa	7690 psi	ASTM D638
Tensile Strength, Yield	46.0 MPa	6670 psi	ASTM D638
	47.0 MPa	6820 psi	ISO 527
Elongation at Break	210 %	210 %	ISO 527
	310 %	310 %	ASTM D638
Elongation at Yield	4.0 %	4.0 %	ISO 527
	5.0 %	5.0 %	ASTM D638
Flexural Strength	64.0 MPa	9280 psi	ISO 178
Flexural Yield Strength	67.0 MPa	9720 psi	ASTM D790

Mechanical Properties	Metric	English	Comments
Flexural Modulus	1.75 GPa	254 ksi	ISO 178
	1.90 GPa	276 ksi	ASTM D790
Izod Impact, Notched	0.600 J/cm @Temperature -40.0 °C	1.12 ft-lb/in @Temperature -40.0 °F	ASTM D256
	3.70 J/cm @Temperature 23.0 °C	6.93 ft-lb/in @Temperature 73.4 °F	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D4812
	NB @Temperature -40.0 °C	NB @Temperature -40.0 °F	ASTM D4812
Izod Impact, Notched (ISO)	6.30 kJ/m² @Temperature -40.0 °C	3.00 ft-lb/in² @Temperature -40.0 °F	ISO 180
	29.6 kJ/m² @Temperature 23.0 °C	14.1 ft-lb/in² @Temperature 73.4 °F	ISO 180
Puncture Energy	45.0 J	33.2 ft-lb	Puncture Resistance @Max Load, 23°C; ASTM D3763
	71.0 J	52.4 ft-lb	Puncture Resistance @ max load, 23°C; ISO 6603-2
	48.0 J @Temperature -40.0 °C	35.4 ft-lb @Temperature -40.0 °F	Puncture Resistance at Max Load; ASTM D3763
	55.0 J @Temperature -40.0 °C	40.6 ft-lb @Temperature -40.0 °F	Puncture Resistance at Max Load; ISO 6603-2

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	73.0 °C	163 °F	ISO 75
	73.0 °C	163 °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 @Thickness 1.50 mm	HB @Thickness 0.0591 in	

Optical Properties	Metric	English	Comments
Haze	0.30 %	0.30 %	ASTM D1003

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

Processing Properties	Metric	English	Comments
Melt Temperature	250 - 290 °C	482 - 554 °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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