Product Data Sheet

Drystar™ 0113 Copolyester

Application/Uses

- Injection molding

Product Description

Eastman is pleased to announce the launch of DRYSTAR* copolyesters. This new product-line is designed to meet the needs of converters seeking value-added solutions to their drying requirements of copolyesters. Eastmans copolyesters are highly valued for their excellent balance of properties such as superior aesthetics, impact strength, and chemical resistance. These properties can be optimally realized when the resins are properly dehydrated in accordance to recommended drying conditions and equipment.

Recognizing this value, Eastman conceived Drystar™ copolyesters to allow converters with limited access to desiccant dryers to achieve these optimizations. In addition, some converters with desiccant dryers may still find Drystar™ copolyesters value-adding to attain production flexibility and cost saving by removing the drying process prior to injection molding, profile extruding, or extrusion blow molding copolyesters. The initial launch comprises of the commercialization of four grades of Drystar™ copolyesters and Eastman has on-going program to extend this strategic product-line in the future.

*DRYSTAR is only available in the Asia Pacific Region.

Typical Properties

Property[a]	Test[b] Method	Typical Value, Units[c]
Specific Gravity	D 792	1.27
Water Absorption, 24 h immersion		
	D 570	0.13%
	ISO 62	0.13%
Mold Shrinkage Parallel to Flow, 3.2-mm (0.125-in.) thickness	D 955	0.002-0.005 mm/mm (0.002-0.005 in./in.)
Density	ISO 1183	1.27 g/cm^3
90° Tear Resistance		
(10% solids & 6/9 AF test oil)		1-2%
(10 % solids & 6/9 AF New test solution)		1-2%
Mechanical Properties		
Tensile Stress @ Yield		
	D 638	50 MPa (7300 psi)

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	ISO 527	50 MPa
Tensile Stress @ Break		
	D 638	28 MPa (4100 psi)
	ISO 527	28 MPa
Elongation @ Yield		
	D 638	4.3%
	ISO 527	4.2%
Elongation @ Break		
	D 638	110%
	ISO 527	60%
Flexural Modulus		
	D 790	2100 MPa (3 x 10^5 psi)
	ISO 178	2000 MPa
Flexural Yield Strength		
	D 790	70 MPa (10200 psi)
	ISO 178	68 MPa
Rockwell Hardness, R Scale	D 785	106
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	101 J/m (1.9 ft·lbf/in.)
@ 23°C	ISO 180	6.2 kJ/m^2
@ -40°C (-40°F)	D 256	37 J/m (0.7 ft·lbf/in.)
@ -40°C	ISO 180	4.2 kJ/m^2
Impact Strength, Unnotched		
@ 23°C (73°F)	D 4812	NB
@ -40°C (-40°F)	D 4812	NB
Impact Resistance (Puncture), Energy @ Max. Load		
@ 23°C (73°F)	ISO 6603-2	12 J
@ -40°C (-40°F)	ISO 6603-2	13 J
Thermal Properties		
Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	70°C (158°F)
@ 1.82 MPa (264 psi)	D 648	64°C (147°F)
@ 0.45 MPa	ISO 75	70°C
@ 1.80 MPa	ISO 75	64°C
Vicat Softening Temperature		
@ 1 kg load	D 1525	85°C (185°F)
@ 1 kg load	ISO 306	85°C
@ 5 kg load	ISO 306	76°C
Thermal Conductivity		0.19 W/m·K (1.3 Btu·in./h·ft^2·°F)
Specific Heat		

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@ 60°C (140°F)		1.3 kJ/kg·K (0.31 Btu/lb·°F)
@ 240°C (464°F)		2.0 kJ/kg·K (0.48 Btu/lb·°F)

Electrical Properties		
Dielectric Constant		
1 kHz	D 150	2.6
1 MHz	D 150	2.4
Dissipation Factor		
1 kHz	D 150	0.005
1 MHz	D 150	0.017
Arc Resistance	D 495	158 sec
Volume Resistivity	D 257	10^{15} ohm·cm
Surface Resistivity	D 257	10^{16} ohms/square
Dielectric Strength, Short Time, 500 V/sec rate-of-rise	D 149	410 kV/mm (410 V/mil)

Typical Processing Conditions	
Drying Temperature [d]	70°C (160°F)
Drying Time [d]	6 hrs
Processing Melt Temperature	250-270°C (480-520°F)
Mold Temperature	15-40°C (60-100°F)

[a] *Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.*

[b] *Unless noted otherwise, the test method is ASTM.*

[c] *Units are in SI or US customary units.*

[d] *Drying is only recommended for products previously opened and exposed to humid conditions.*

General

All ISO tests are run @ 4-mm thickness with the exception of Impact Resistance, which is run @ 2-mm thickness.

Comments

Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform to the values given.

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