

Drystar™ 0601

Copolyester

Eastman Chemical Company

Message:

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. Eastman's 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.

General Information			
Features	Good Chemical Resistance Good Impact Resistance Pleasing Surface Appearance		
Forms	Pellets		
Processing Method	Extrusion Blow Molding Injection Molding Profile Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.27	g/cm ³	ASTM D792, ASTM D1505
23°C	1.27	g/cm ³	ISO 1183/D
Water Absorption (23°C, 24 hr)	0.13	%	ASTM D570, ISO 62
Inherent Viscosity ¹			Internal Method
Film : 23°C	0.70		
Pellets : 23°C	0.75		
Tear Resistance			ASTM D2582
M.D. : 23°C	93	N	
T.D. : 23°C	93	N	
Carbon Dioxide Permeability (23°C) ²	49	cm ³ · mm/m ² /atm/24 hr	ASTM D1434
Tear Propagation Resistance ³			ASTM D1938
M.D. : 23°C	36	kN/m	
T.D. : 23°C	36	kN/m	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			

R-Scale, 23°C	106		ASTM D785
R-Scale, 23°C	109		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2100	MPa	ASTM D638, ISO 527-2
Tensile Strength			ASTM D638, ISO 527-2
Yield, 23°C	50.0	MPa	
Break, 23°C	28.0	MPa	
Tensile Elongation			
Break, 23°C	130	%	ASTM D638
Break, 23°C	100	%	ISO 527-2
Flexural Modulus			
23°C	2100	MPa	ASTM D790
23°C	2000	MPa	ISO 178
Flexural Stress			
23°C	68.0	MPa	ISO 178
Yield, 23°C	70.0	MPa	ASTM D790
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	250	µm	
Secant Modulus			ASTM D882
MD	1900	MPa	
TD	1900	MPa	
Tensile Strength			ASTM D882
MD : Yield	52.0	MPa	
TD : Yield	52.0	MPa	
MD : Break	59.0	MPa	
TD : Break	55.0	MPa	
Tensile Elongation			ASTM D882
MD : Yield	4.0	%	
TD : Yield	4.0	%	
MD : Break	400	%	
TD : Break	400	%	
Dart Drop Impact ⁴			ASTM D1709A
-18°C	500	g	
23°C	400	g	
Elmendorf Tear Strength			ASTM D1922
MD	1400	g	
TD	1700	g	
Trouser Tear Resistance ⁵			ISO 6383-1
MD	36.0	N/mm	
TD	36.0	N/mm	
Oxygen Permeability (23°C)	10	cm ³ ·mm/m ² /atm/24 hr	ASTM D3985

Water Vapor Transmission Rate (38°C, 100% RH)	7.0	g/m ² /24 hr	ASTM F1249
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
-40°C	37	J/m	ASTM D256
23°C	100	J/m	ASTM D256
-40°C	4.2	kJ/m ²	ISO 180/1A
23°C	6.2	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
-40°C, 3.20 mm	No Break		ASTM D4812
-30°C, 3.20 mm	No Break		ASTM D4812
-20°C, 3.20 mm	No Break		ASTM D4812
23°C, 3.20 mm	No Break		ASTM D4812
-40°C ⁶	No Break		ISO 180/1U
-30°C ⁷	No Break		ISO 180/1U
-20°C ⁸	No Break		ISO 180/1U
23°C ⁹	No Break		ISO 180/1U
Instrumented Dart Impact			
-40°C, 2.50 mm, Energy at Peak Load	41.0	J	ASTM D3763
-40°C, 3.20 mm, Energy at Peak Load	50.0	J	ASTM D3763
23°C, 2.50 mm, Energy at Peak Load	28.0	J	ASTM D3763
23°C, 3.20 mm, Energy at Peak Load	33.0	J	ASTM D3763
-40°C, 2.50 mm, Energy to Peak Force	35.0	J	ISO 6603-2
-40°C, 3.20 mm, Energy to Peak Force	36.0	J	ISO 6603-2
23°C, 2.50 mm, Energy to Peak Force	40.0	J	ISO 6603-2
23°C, 3.20 mm, Energy to Peak Force	44.0	J	ISO 6603-2
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	70.0	°C	
1.8 MPa, Unannealed	64.0	°C	
Glass Transition Temperature	80.0	°C	DSC
Vicat Softening Temperature	85.0	°C	ASTM D1525
CLTE - Flow (-30 to 40°C)	5.1E-5	cm/cm/°C	ASTM D696
Specific Heat			DSC
60°C	1300	J/kg/°C	
100°C	1760	J/kg/°C	
150°C	1880	J/kg/°C	
200°C	1970	J/kg/°C	
250°C	2050	J/kg/°C	
Thermal Conductivity (23°C)	0.21	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	ASTM D257

Volume Resistivity (23°C)	1.0E+15	ohms·cm	ASTM D257
Dielectric Strength ¹⁰ (23°C)	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 1 kHz	2.60		
23°C, 1 MHz	2.40		
Dissipation Factor			ASTM D150
23°C, 1 kHz	5.0E-3		
23°C, 1 MHz	0.020		
Arc Resistance	158	sec	ASTM D495
Optical	Nominal Value	Unit	Test Method
Gloss (45°)	108		ASTM D2457
Transmittance			ASTM D1003
Total	91.0	%	
Regular	89.0	%	
Clarity	85.0		ASTM D1746
Haze	0.80	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	70.0	°C	
Drying Time	6.0	hr	
Processing (Melt) Temp	250 to 270	°C	
Mold Temperature	15.0 to 40.0	°C	
NOTE			
1.	EMN-A-AC-GV-1		
2.	50% RH		
3.	254 mm/min, Split Tear Method		
4.	12.7 mm dia. head, 127 mm dia. clamp, 600 mm drop		
5.	200 mm/min		
6.	4 mm		
7.	4 mm		
8.	4 mm		
9.	4 mm		
10.	500 V/sec, Method A (Short-Time)		

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