

Technical Data Sheet

Eastman Tritan™ Copolyester MP200

Applications

- Pharmaceutical packaging
- Rigid medical packaging

Key Attributes

- Best-in-class toughness
- Complaint with ISO1167
 - Compliant with select ISO10993, USP 35 <661> Tests
 - Does not contain Bisphenol-A (BPA)
 - Does not contain plasticizers
 - Enduring sustainability
 - Excellent heat resistance
 - Outstanding chemical resistance
 - Reliable, predictable processing for extrusion, thermoforming, heat and radio frequency sealing
 - Suitable for most forms of sterilization
 - Superb clarity and high gloss

Product Description

Eastman Tritan MP200 is an amorphous copolyester that combines excellent clarity and toughness with outstanding heat and chemical resistance. Film and sheet manufactured from this new-generation copolyester can be thermoformed with a wide processing window that allows for product designs that reflect intricate detail. Eastman Tritan MP200 copolyester is suitable for use with most forms of sterilization including radiation and ethylene oxide. It is NOT suitable for autoclave/steam sterilization. Eastman Tritan MP200 copolyester has been formulated for use in medical film, sheet, and packaging applications.

Typical Properties

Property ^a	Test Method ^b	Typical Value, Units ^c
General Properties		
Thickness of Film Tested	ASTM D 374	0.254 mm (0.010 in.)
Density	ASTM D 1505	1.19 g/cm ³
Water Vapor Transmission Rate ^u		
@ 23°C (73°F)	ASTM F 1249	4 g/m ² ·24h (0.3 g/100in. ² ·24h)
@ 38°C (100°F)		10 g/m ² ·24h (1 g/100in. ² ·24h)
Gas Permeability, CO ₂	ASTM D 1434	211 cm ³ ·mm/m ² ·24h·atm (534 cm ³ ·mil/100in. ² ·24h·atm)
Gas Permeability, O ₂	ASTM D 3985	44 cm ³ ·mm/m ² ·24h·atm (111 cm ³ ·mil/100in. ² ·24h·atm)
Elmendorf Tear Resistance		
M.D.	ASTM D 1922	3.7 N (384 gf)
T.D.		4.2 N (433 gf)
PPT Tear Resistance		
M.D.	ASTM D 2582	40 N (9 lbf)
T.D.		40 N (9 lbf)
Tear Propagation Resistance, Split Tear Method ^e		
M.D.	ASTM D 1938	3 N (1 lbf)
M.D.		10 N/mm (55 lbf/in.)
T.D.		2 N (1 lbf)
T.D.		9 N/mm (51 lbf/in.)
Tear Resistance, Trouser @ 200 mm/min		
M.D.	ISO 6383-1	10 N/mm (56 lbf/in.)

T.D.		9 N/mm (52 lbf/in.)
Tensile Strength @ Yield		
M.D.	ASTM D 882	43 MPa (6300 psi)
T.D.		41 MPa (6000 psi)
Tensile Strength @ Break		
M.D.	ASTM D 882	57 MPa (8300 psi)
T.D.		42 MPa (5900 psi)
Elongation @ Yield		
M.D.	ASTM D 882	8 %
T.D.		8 %
Elongation @ Break		
M.D.	ASTM D 882	114 %
T.D.		115 %
Tensile Modulus		
M.D.	ASTM D 882	1500 MPa (2.2 x 10 ³ psi)
T.D.		1400 MPa (2.1 x 10 ³ psi)
Dart Impact¹		
@ -18°C (0°F)		825 g (1.82 lb)
@ 23°C (73°F)	ASTM 1709A	825 g (1.82 lb)
@ -30°C (-22°F)		852 g (1.88 lb)
Puncture Resistance (Dynatup); Total Energy	ASTM D 3763	4.5 J (3.3 ft-lb)
Water Absorption, 24 hours	ASTM D 570	0.5 %
Surface Energy		
Dispersive		39 dynes/cm
Polar	ASTM D 5946	8 dynes/cm
Total		47 dynes/cm
Taber Abrasion (average at 25 cycles)	ASTM 1044	20 % haze
Optical Properties		
Refractive Index	ASTM D 542	1.54
Yellowness Index	ASTM D 1925	0.5
UV % Transmission at 380 nm	UV/Vis Spectro	89 %
Haze	ASTM D 1003	0.8 %
Gloss @ 60°	ASTM D 2457	158
Light Transmission (Total Transmittance)	ASTM D 1003	93 %
Thermal Properties		
Glass Transition Temperature (T _g)	DSC	119 °C (247 °F)
Specific Heat		
@ 100°C (212°F)		1.9 J/g-°C (0.46 Btu/lb-°F)
@ 150°C (302°F)		2.3 J/g-°C (0.54 Btu/lb-°F)
@ 200°C (392°F)		2.4 J/g-°C (0.58 Btu/lb-°F)
@ 250°C (482°F)		2.6 J/g-°C (0.62 Btu/lb-°F)
@ 60°C (140°F)	DSC	1.7 J/g-°C (0.42 Btu/lb-°F)
Coefficient of Linear Thermal Expansion	ASTM D 696	8 (x10-5/°C) (5 (x10-5/°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 (a) Test conducted at 23°C (73.4°F) and 100% relative humidity. (b) Test conducted at 38°C (100.4°F) and 100% relative humidity. ^e @ 254 mm/min (10 in./min)

^f 12.7 mm (1/2 in.) dia. head, 127 mm (5 in.) dia. clamp, 660 mm (26 in.) drop

Comments

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

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