

# Technical Data Sheet

## Eastman Tritan™ Copolyester MP100

### Applications

- Extruding
- Flexible medical device packaging
- Medical packaging non-woven
- Medical tubing & bags - not iv
- Packaging component films
- Packaging components non food contact
- Rigid medical packaging

### Key Attributes

- Best-in-class toughness
- 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, long-term clarity

### Product Description

Eastman Tritan™ MP100 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™ MP100 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™ MP100 copolyester has been formulated for use in medical film, sheet, and packaging applications.

### Typical Properties

Property <sup>a</sup>	Test Method <sup>b</sup>	Typical Value, Units <sup>c</sup>
<b>General</b>		
Thickness of Film Tested	ASTM D 374	.25 mm (.01 in.)
Density	ASTM D 1505	1.19 g/cm <sup>3</sup>
<b>Mechanical &amp; Physical Properties</b>		
Elmendorf Tear Resistance		
M.D.	ASTM 1922	5 N (524 gf)
T.D.	ASTM 1922	6 N (575 gf)
PPT Tear Resistance		
M.D.	ASTM 2582	42 N (10 lbf)
T.D.	ASTM 2582	56 N (13 lbf)
Tear Propagation Resistance, Split Tear Method		
M.D.	ASTM 1938	13 N/mm (74.8 lbf/in.)
M.D.	ASTM 1938	4 N (.8 lbf)
T.D.	ASTM 1938	12 N/mm (65.6 lbf/in.)
T.D.	ASTM 1938	3 N (.7 lbf)
Tear Resistance, Trouser @ 200 mm/min		
M.D.	ISO 6383-1	11 N/mm (63 lbf/in.)
T.D.	ISO 6383-1	11 N/mm (63 lbf/in.)
Tensile Strength @ Yield		
M.D.	ASTM D 882	41 MPa (5908 psi)
T.D.	ASTM D 882	40 MPa (5782 psi)
Tensile Strength @ Break		
M.D.	ASTM D 882	59 MPa (8548 psi)
T.D.	ASTM D 882	52 MPa (7581 psi)
Elongation @ Yield		

M.D.	ASTM D 882	7 %
T.D.	ASTM D 882	7 %
<b>Elongation @ Break</b>		
M.D.	ASTM D 882	179 %
T.D.	ASTM D 882	203 %
<b>Tensile Modulus</b>		
M.D.	ASTM D 882	1462 MPa (2 x 10 <sup>3</sup> psi)
T.D.	ASTM D 882	1383 MPa (2 x 10 <sup>3</sup> psi)
<b>Dart Impact<sup>e</sup></b>		
@ -18°C (0°F)	ASTM 1709A	867 g (2 lb)
@ 23°C (73°F)	ASTM 1709A	882 g (2 lb)
@ -30°C (-22°F)	ASTM 1709A	913 g (2 lb)
Puncture Resistance (Dynatup); Total Energy	ASTM D 3763	4.6 J (3 ft·lbf)
Water Absorption, 24 hours	ASTM D 570	.5 %
Surface Energy (Polar)	ASTM D 5946	45 dynes/cm
Taber Abrasion (average at 25 cycles)	ASTM 1044	23 % haze
<b>Optical Properties</b>		
Haze	ASTM D 1003	1 %
Gloss		
@ 60°	ASTM D 2457	161
<b>Light Transmission</b>		
Total	ASTM D 1003	92 %
Refractive Index	ASTM D 542	1.545
UV % Transmission at 380 nm	UV/Vis Spectro	89 %
<b>Permeability</b>		
<b>Water Vapor Transmission Rate<sup>u</sup></b>		
@ 23°C (73°F)	ASTM F 1249	4 g/m <sup>2</sup> ·24h (.2 g/100in. <sup>2</sup> ·24h)
@ 38°C (100°F)	ASTM F 1249	11 g/m <sup>2</sup> ·24h (.7 g/100in. <sup>2</sup> ·24h)
Gas Permeability, CO <sub>2</sub>	ASTM D 1434	149 cm <sup>3</sup> ·mm/m <sup>2</sup> ·24h·atm (379 cm <sup>3</sup> /100in. <sup>2</sup> ·24h·atm)
Gas Permeability, O <sub>2</sub>	ASTM D 3985	32 cm <sup>3</sup> ·mm/m <sup>2</sup> ·24h·atm (82 cm <sup>3</sup> ·mil/100in. <sup>2</sup> ·24h·atm)
<b>Thermal Properties</b>		
Glass Transition Temperature (T <sub>g</sub> )	DSC	110 °C (229 °F)
<b>Specific Heat</b>		
@ 100°C (212°F)		1.89 J/g·°C (.45 Btu/lb·°F)
@ 150°C (302°F)		2.25 J/g·°C (.54 Btu/lb·°F)
@ 200°C (392°F)		2.40 J/g·°C (.58 Btu/lb·°F)
@ 250°C (482°F)		2.57 J/g·°C (.62 Btu/lb·°F)
@ 60°C (140°F)	DSC	1.71 J/g·°C (.41 Btu/lb·°F)
Coefficient of Linear Thermal Expansion	ASTM D 696	8.8 (x10 <sup>-5</sup> /°C) (4.9 (x10 <sup>-5</sup> /°F))
Brittleness Temperature	ASTM D 1790	<-60 °C (<-76 °F)

<sup>a</sup> Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.

<sup>b</sup> Unless noted otherwise, the test method is ASTM.

<sup>c</sup> Units are in SI or US customary units.

<sup>d</sup> Test conducted at 23°C (73.4°F) and 100% relative humidity. Test conducted at 38°C (100.4°F) and 100% relative

humidity. <sup>e</sup> 12.7 mm (1/2 in.) dia. head, 127 mm (5 in.) dia. clamp, 660 mm (26 in.) drop)

## Eastman Medical Disclaimer

It is the responsibility of the medical device manufacturer ("Manufacturer") to determine the suitability of all component parts and raw materials, including any Eastman product, used in its final product in order to ensure

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## Comments

Properties reported here are based on limited testing. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.

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