Product Data Sheet

Eastman Tritan™ Copolyester FX200

Application/Uses

- Consumer and durable goods
- Graphic Arts
- Leisure and safety
- Specialty films

Key Attributes

- Does not contain Bisphenol-A (BPA)
- Does not contain plasticizers
- Excellent clarity
- Good chemical resistance
- No pre-drying of film prior to thermoforming
- Tremendous toughness
- Very good heat resistance
- Wide thermoforming window

Product Description

Eastman Tritan™ FX200 is an amorphous copolyester that combines excellent clarity and toughness with outstanding heat and chemical resistance. Films manufactured from this new-generation copolyester can be thermoformed without pre-drying and with a wide processing window that allows for product designs that reflect intricate detail. Eastman Tritan™ FX200 copolyester may be used in repeated use food contact articles under United States Food and Drug Administration (FDA) regulations. Eastman Tritan™ FX200 copolyester is certified to NSF/ANSI Standard 51 for Food Equipment Materials.

Typical Properties (Preliminary)

Property[a]	Test[b] Method	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 [d]		
@ 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 10^5 psi)
T.D.		1400 MPa (2.1 x 10^5 psi)
Dart Impact [f]		
@ 23°C (73°F)	ASTM 1709A	825 g (1.82 lb)
@ -18°C (0°F)		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		
Polar	ASTM D 5946	8 dynes/cm
Dispersive		39 dynes/cm
Total		47 dynes/cm
Taber Abrasion (average at 25 cycles)	ASTM 1044	20% haze

Thermal Properties

Glass Transition Temperature (T_g)	DSC	119°C (247°F)
Specific Heat		
@ 60°C (140°F)	DSC	1.7 J/g-°C (0.42 Btu/lb·°F)
@ 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)
Coefficient of Linear Thermal Expansion	ASTM D 696	8 (x10-5/°C) (5 (x10-5/°F))

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%

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 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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