Product Data Sheet

Eastar™ Copolyester EN001

Application/Uses

- Food packaging
- Housewares
- Toys/Sporting goods
- Writing instruments

Product Description

Eastar™ EN001 Copolyester is a thermoplastic polyester copolymer. Eastar™ EN001 Copolyester has a relatively slow crystallization rate. This broadens the operating window for extrusion and forming processes and helps maintain good clarity when processing much thicker sheet. Eastar™ EN001 copolyester can also be used for injection molding applications. It is the preferred general-purpose crystallizable PET for thermoforming.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.
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Typical Properties

Property[a]	Test[b] Method	Typical Value, Units[c]
General Properties (ASTM Method)		
Specific Gravity	D 792	1.33
Mechanical Properties (ASTM Method)		
Tensile Stress @ Yield	D 638	58 MPa (8400 psi)
Tensile Stress @ Break	D 638	25 MPa (3600 psi)
Elongation @ Break	D 638	120%
Tensile Modulus	D 638	2400 MPa (3.5×10^5 psi)
Flexural Modulus	D 790	2500 MPa (3.6×10^5 psi)
Flexural Yield Strength	D 790	84 MPa (12200 psi)
Rockwell Hardness, R Scale	D 785	112

Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	40 J/m (0.75 ft·lbf/in.)
@ -40°C (-40°F)	D 256	27 J/m (0.51 ft·lbf/in.)
Impact Strength, Unnotched		
@ 23°C (73°F)	D 4812	NB
@ -20°C (-4°F)	D 4812	NB
@ -30°C (-22°F)	D 4812	NB
@ -40°C (-40°F)	D 4812	NB
Impact Resistance (Puncture), Energy @ Max. Load		
2.5-mm (0.100-in.) Thick Plaques, @ 23°C (73°F)	D 3763	26 J (19 ft·lbf)
2.5-mm (0.100-in.) Thick Plaques, @ -40°C (-40°F)	D 3763	1.6 J (1.2 ft·lbf)
3.2-mm (0.125-in.) Thick Plaques @ 23°C (73°F)	D 3763	31 J (23 ft·lbf)
3.2-mm (0.125-in.) Thick Plaques @ -40°C (-40°F)	D 3763	2.1 J (1.6 ft·lbf)
Thermal Properties (ASTM Method)		
Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	69°C (156°F)
@ 1.82 MPa (264 psi)	D 648	65°C (149°F)
Optical Properties (ASTM Method)		
Haze	D 1003	1.0%
Total Transmittance	D 1003	84%
General Properties (ISO Method)		
Density	ISO 1183, Method D	1.33 g/cm^3
Mechanical Properties (ISO Method)		
Tensile Stress @ Yield	ISO 527	57 MPa
Tensile Stress @ Break	ISO 527	25 MPa
Elongation @ Break	ISO 527	120%
Tensile Modulus	ISO 527	2400 MPa
Flexural Modulus	ISO 178	2300 MPa
Flexural Yield Strength	ISO 178	77 MPa
Rockwell Hardness, R Scale	ISO 2039-2	114
Izod Impact Strength, Notched, Type 1 Specimen, Type A Notch		
@ 23°C	ISO 180	4.5 kJ/m^2
@ -40°C	ISO 180	3.1 kJ/m^2
Impact Strength, Unnotched, Type 1 Specimen		
@ 23°C	ISO 180	NB

@ -20°C	ISO 180	NB
@ -30°C	ISO 180	190 (90%C 10%NB) kJ/m^2
@ -40°C	ISO 180	170 kJ/m^2
Impact Resistance (Puncture), Energy @ Max. Load		
2.5-mm Thick Plaques @ 23°C	ISO 6603-2	15 J
2.5-mm Thick Plaques @ -40°C	ISO 6603-2	0.8 J
3.2-mm Thick Plaques @ 23°C	ISO 6603-2	18 J
3.2-mm Thick Plaques @ -40°C	ISO 6603-2	1.0 J
Thermal Properties (ISO Method)		
Deflection Temperature		
@ 0.45 MPa	ISO 75	69°C
@ 1.80 MPa	ISO 75	65°C

[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.*

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.

Eastar is a trademark of Eastman Chemical Company.

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