

# Technical Data Sheet

## Eastar™ Copolyester EN059 Natural

### Applications

- Sporting equipment

### Product Description

Tailored to meet the needs of injection-molding market, Eastar™ Copolyesters are clear materials with good mechanical properties and chemical resistance to a variety of substances.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

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### Typical Properties

Property <sup>a</sup>	Test Method <sup>b</sup>	Typical Value, Units <sup>c</sup>
<b>General Properties</b>		
Specific Gravity	D 792	1.33
Mold Shrinkage	D 955	0.002 mm/mm (0.002 in./in.)
Water Absorption, 24 h immersion	D 570	0.19 %
<b>Mechanical Properties</b>		
Tensile Stress @ Yield	D 638	58 MPa (8400 psi)
Tensile Stress @ Break	D 638	24 MPa (3500 psi)
Elongation @ Yield	D 638	4 %
Elongation @ Break	D 638	90 %
Flexural Yield Strength	D 790	78 MPa (11300 psi)
Flexural Modulus	D 790	2400 MPa (3.5 x 10 <sup>5</sup> psi)
Rockwell Hardness, R Scale	D 785	111
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	56 J/m (1.0 ft·lbf/in.)
@ -40°C (-40°F)	D 256	33 J/m (0.6 ft·lbf/in.)
Impact Strength, Unnotched		
@ 23°C (73°F)	D 4812	NB
@ -40°C (-40°F)	D 4812	2446 J/m (46 ft·lbf/in.)
Impact Resistance (Puncture), Energy @ Max. Load		
@ 23°C (73°F)	D 3763	32 J (24 ft·lbf)
@ -40°C (-40°F)	D 3763	38 J (28 ft·lbf)
<b>Optical Properties</b>		
Haze	D 1003	<1 %
Total Transmittance	D 1003	82 %
<b>Thermal Properties</b>		
Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	69 °C (156 °F)

@ 1.82 MPa (264 psi)	D 648	63 °C (145 °F)
Vicat Softening Temperature		
@ 1 kg load	D 1525	80 °C (176 °F)
<b>Typical Processing Conditions</b>		
Drying Temperature		160 °C (320 °F)
Drying Time		4-6 hrs
Processing Melt Temperature		277-293 °C (530-560 °F)
Mold Temperature		16-32 °C (60-90 °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.

## 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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