

# Technical Data Sheet

## Eastman Tritan™ Copolyester TX2000

### Applications

- Auto plastics
- Commercial housewares
- Compounders
- Consumer electronics
- Consumer housewares - food contact (fc)
- Consumer housewares-nfc
- Multi-layer film non food contact
- Packaging component films
- Packaging components non food contact
- Small appliances non-food contact
- Sporting equipment
- Water/sport bottles
- Window housings

### Key Attributes

- Ease of processing
  - Excellent clarity
  - Excellent hydrolytic stability
- Fast drying times
  - Good chemical resistance
- Good heat resistance
  - Outstanding impact resistance
- Quick cycle times

### Product Description

Eastman Tritan™ TX2000 is an amorphous copolyester with excellent appearance and clarity. Its most outstanding features are excellent toughness, hydrolytic stability, and heat and chemical resistance. This new-generation copolyester can also be molded into various applications without incorporating high levels of residual stress. Combined with Tritan™ copolyester's outstanding chemical resistance and hydrolytic stability, these features give molded products enhanced durability in the dishwasher environment, which can expose products to high heat, humidity, and aggressive cleaning detergents. Tritan™ TX2000 copolyester may be used in repeated use food contact articles under United States Food and Drug Administration (FDA) regulations. Tritan™ TX2000 copolyester is certified to NSF/ANSI Standard 51 for Food Equipment Materials.

This product has been *CRADLE TO CRADLE CERTIFIED*™ Bronze, with Material Health Certificate, Platinum. The *CRADLE TO CRADLE CERTIFIED* mark is a registered certification mark used under license through the Cradle to Cradle Products Innovation Institute, a nonprofit organization that administers the publicly available *Cradle to Cradle Certified*™ Product Standard which provides designers and manufacturers with criteria and requirements for continually improving product materials and manufacturing processes. The *Cradle to Cradle Certified*™ Product Standard guides designers and manufacturers through a continual improvement process that looks at a product through five quality categories—material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness. A product receives an achievement level in each category—Basic, Bronze, Silver, Gold, or Platinum—with the lowest achievement level representing the product's overall mark.

The Material Health Certificate provides manufacturers with a trusted way to communicate their efforts to identify and replace chemicals of concern in their products. For more information about Cradle to Cradle certification and to obtain printable certificates for Eastman copolyesters, visit [www.cn-plas.com](http://www.cn-plas.com). Search for Eastman Chemical Company in *Cradle to Cradle Certified* Products Registry.

### 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	1.17
Mold Shrinkage	D 955	0.005-0.007 mm/mm (0.005-0.007 in./in.)
<b>Mechanical Properties (ISO Method)</b>		
Tensile Strength @ Yield	ISO 527	45 MPa
Tensile Strength @ Break	ISO 527	49 MPa

Elongation @ Yield	ISO 527	7 %
Elongation @ Break	ISO 527	130 %
Tensile Modulus	ISO 527	1624 MPa
Flexural Modulus	ISO 178	1531 MPa
Izod Impact Strength, Notched		
@ 23°C	ISO 180	66 kJ/m <sup>2</sup>
@ -40°C	ISO 180	14 kJ/m <sup>2</sup>
<b>Mechanical Properties</b>		
Tensile Stress @ Yield	D 638	44 MPa (6400 psi)
Tensile Stress @ Break	D 638	53 MPa (7700 psi)
Elongation @ Yield	D 638	7 %
Elongation @ Break	D 638	140 %
Tensile Modulus	D 638	1624 MPa (2.28 x 10 <sup>5</sup> psi)
Flexural Modulus	D 790	1585 MPa (2.28 x 10 <sup>5</sup> psi)
Flexural Yield Strength	D 790	66 MPa (9600 psi)
Rockwell Hardness, R Scale	D 785	115
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	650 J/m (12.2 ft·lbf/in.)
Impact Strength, Unnotched		
@ 23°C (73°F)	D 4812	NB
<b>Optical Properties</b>		
Total Transmittance	D 1003	92 %
Haze	D 1003	<1 %
<b>Thermal Properties</b>		
Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	109 °C (228 °F)
@ 1.82 MPa (264 psi)	D 648	92 °C (198 °F)
<b>Typical Processing Conditions</b>		
Drying Temperature		88 °C (190 °F)
Drying Time		4-6 hrs
Processing Melt Temperature		260-282 °C (500-540 °F)
Mold Temperature		38-66 °C (100-150 °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 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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