



# Product Data Sheet

## Eastman Tritan™ Copolyester TX1001

### Application/Uses

- Appliances
- Consumer and durable goods
- Housewares
- Small appliances

### 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™ TX1001 is an amorphous copolyester with excellent appearance and clarity. EastmanTritan™ TX1001 contains a mold release derived from vegetable based sources. 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™ TX1001 copolyester may be used in repeated use food contact articles under United States Food and Drug Administration (FDA) regulations. Tritan™ TX1001 copolyester is certified to NSF/ANSI Standard 51 for Food Equipment Materials and is also certified to NSF/ANSI Standard 61 – Drinking Water System Components-Health Effects.

### Typical Properties (Preliminary)

| Property <sup>a</sup>  | Test <sup>b</sup> Method | Typical Value, Units <sup>c</sup>       |
|------------------------|--------------------------|-----------------------------------------|
| General Properties     |                          |                                         |
| Specific Gravity       | D 792                    | 1.18                                    |
| Mold Shrinkage         | D 955                    | 0.005-0.007 mm/mm (0.005-0.007 in./in.) |
| Mechanical Properties  |                          |                                         |
| Tensile Stress @ Yield | D 638                    | 43 MPa (6200 psi)                       |
| Tensile Stress @ Break | D 638                    | 53 MPa (7700 psi)                       |
| Elongation @ Yield     | D 638                    | 6%                                      |
| Elongation @ Break     | D 638                    | 210%                                    |
| Tensile Modulus        | D 638                    | 1550 MPa (2.25 x 10 <sup>5</sup> psi )  |

|                                             |        |                                        |
|---------------------------------------------|--------|----------------------------------------|
| Flexural Modulus                            | D 790  | 1550 MPa (2.25 x 10 <sup>5</sup> psi ) |
| Flexural Yield Strength                     | D 790  | 62 MPa (9000 psi)                      |
| Rockwell Hardness, R Scale                  | D 785  | 112                                    |
| Izod Impact Strength, Notched @ 23°C (73°F) | D 256  | 980 J/m (18.4 ft·lbf/in.)              |
| Impact Strength, Unnotched @ 23°C (73°F)    | D 4812 | NB                                     |

### Mechanical Properties (ISO Method)

|                                      |         |                      |
|--------------------------------------|---------|----------------------|
| Tensile Stress @ Yield               | ISO 527 | 43 MPa               |
| Tensile Strength @ Break             | ISO 527 | 58 MPa               |
| Elongation @ Yield                   | ISO 527 | 7%                   |
| Elongation @ Break                   | ISO 527 | 185%                 |
| Tensile Modulus                      | ISO 527 | 1548 MPa             |
| Flexural Modulus                     | ISO 178 | 1495 MPa             |
| Flexural Strength                    | ISO 178 | 59 MPa               |
| Izod Impact Strength, Notched @ 23°C | ISO 180 | 93 kJ/m <sup>2</sup> |
| @ -40°C                              | ISO 180 | 20 kJ/m <sup>2</sup> |

### Thermal Properties

|                                             |       |              |
|---------------------------------------------|-------|--------------|
| Deflection Temperature @ 0.455 MPa (66 psi) | D 648 | 99°C (210°F) |
| @ 1.82 MPa (264 psi)                        | D 648 | 85°C (185°F) |

### Optical Properties

|                     |        |     |
|---------------------|--------|-----|
| Total Transmittance | D 1003 | 90% |
| Haze                | D 1003 | <1% |

### Typical Processing Conditions

|                             |                       |
|-----------------------------|-----------------------|
| 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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