

# Technical Data Sheet

## Eastar™ Copolyester DN011

### Applications

- Appliances (food contact)
- Bottles-skin care pkg
- Building materials
- Closures-fragrance pkg
- Color cosmetics packaging
- Compounders
- Consumer electronics
- Consumer housewares-NFC
- Displays/in-store fixtures
- Equipment & machinery
- Fragrance packaging
- Home, garden & automotive packaging
- Infant/toddler
- Jars-skin care pkg
- Large appliances non-food contact
- Lighting
- Non-kitchen appliances
- Non-medical housings & hardware for elec
- Oral hygiene
- Packaging components non food contact
- Pens/stationary
- Personal care & cosmetics packaging
- Personal care bottles
- Personal care packaging
- Point-of-purchase
- Skin care packaging
- Small appliances non-food contact
- Visual merchandising
- Water/sport bottles

### Product Description

Eastar™ DN011 copolyester is a brilliantly clear polymer having excellent impact strength, chemical resistance, and low shrinkage rates. Eastar DN011 contains a mold release.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

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This product has received a Platinum level Material Health Certificate from the Cradle to Cradle Products Innovation Institute. A Material Health Certificate is awarded to products that meet the Material Health requirements of the multi-attribute *Cradle to Cradle Certified™* Product Standard. The Cradle to Cradle Products Innovation Institute is 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 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.c2ccertified.org](http://www.c2ccertified.org). Search for Eastman Chemical Company in the Material Health Certificate Registry.

### Typical Properties

| Property <sup>a</sup>                            | Test Method <sup>b</sup> | Typical Value, Units <sup>c</sup>       |
|--|--------------------------|---|
| <b>General</b>                                   |                          |   |
| Specific Gravity                                 | D 792                    | 1.23                                    |
| Mold Shrinkage                                   |                          |   |
| Parallel to Flow                                 | D 955                    | 0.002-0.005 mm/mm (0.002-0.005 in./in.) |
| <b>Mechanical Properties</b>                     |                          |   |
| Tensile Stress @ Yield                           | D 638                    | 44 MPa (6300 psi)                       |
| Tensile Stress @ Break                           | D 638                    | 54 MPa (7800 psi)                       |
| Elongation @ Yield                               | D 638                    | 4 %                                     |
| Elongation @ Break                               | D 638                    | 330 %                                   |
| Tensile Modulus                                  | D 638                    | 1800 MPa (2.6 x 10 <sup>5</sup> psi)    |
| Flexural Modulus                                 | D 790                    | 1800 MPa (2.6 x 10 <sup>5</sup> psi)    |
| Flexural Strength                                | D 790                    | 66 MPa (9600 psi)                       |
| Rockwell Hardness, R Scale                       | D 785                    | 105                                     |
| Izod Impact Strength, Notched                    |                          |   |
| @ 23°C (73°F)                                    | D 256                    | NB                                      |
| @ -40°C (-40°F)                                  | D 256                    | 77 J/m (1.4 ft-lbf/in.)                 |
| Impact Strength, Unnotched                       |                          |   |
| @ 23°C (73°F)                                    | D 4812                   | NB                                      |
| @ -40°C (-40°F)                                  | D 4812                   | NB                                      |
| Impact Resistance (Puncture), Energy @ Max. Load |                          |   |
| @ 23°C (73°F)                                    | D 3763                   | 46 J (34 ft-lbf)                        |
| @ -40°C (-40°F)                                  | D 3763                   | 46 J (34 ft-lbf)                        |
| <b>Optical Properties</b>                        |                          |   |
| Haze   | D 1003                   | <1.0 %                                  |
| Regular Transmittance                            | D 1003                   | 89 %                                    |

|                                      |        |                         |
|--------------------------------------|--------|-------------------------|
| Total Transmittance                  | D 1003 | 92 %                    |
| <b>Thermal Properties</b>            |        |                         |
| Deflection Temperature               |        |                         |
| @ 0.455 MPa (66 psi)                 | D 648  | 73 °C (163 °F)          |
| @ 1.82 MPa (264 psi)                 | D 648  | 64 °C (147 °F)          |
| <b>Typical Processing Conditions</b> |        |                         |
| Drying Temperature                   |        | 71 °C (160 °F)          |
| Drying Time                          |        | 6 hrs                   |
| Processing Melt Temperature          |        | 249-271 °C (480-520 °F) |
| Mold Temperature                     |        | 16-38 °C (60-100 °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 to the values given.

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