EASTMAN

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

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.
The GREENGUARD INDOOR AIR QUALITY CERTIFIED® Mark is a registered certification mark used under license through the GREENGUARD Environmental Institute (GEI). GEI is an industry-independent, non-profit organization that oversees the GREENGUARD Certification Program. The GREENGUARD Certification Program is an industry independent, third-party testing program for low-emitting products and materials for indoor environments. For more information about GEI and to obtain printable certificates for Eastman™ Copolyesters, visit www.greenguard.org . Choose Eastman Chemical Company under the Manufacturer category and click search to display a list of our products.

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.c2ccertified.org . Search for Eastman Chemical Company in *Cradle to Cradle Certified* Products Registry.

Typical Properties

Property[a]	Test Method[b]	Typical Value, Units[c]
General		
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.)
Mechanical Properties		
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 10^5 psi)
Flexural Modulus	D 790	1800 MPa (2.6 x 10^5 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)
Optical Properties		
Haze	D 1003	<1.0 %
Regular Transmittance	D 1003	89 %
Total Transmittance	D 1003	92 %
Thermal Properties		
Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	73 °C (163 °F)
@ 1.82 MPa (264 psi)	D 648	64 °C (147 °F)
Typical Processing Conditions		
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)

[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 to the values given.

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