

Technical Data Sheet

Eastar™ Copolyester DN011

Application/Uses

- Cosmetic jar caps
- Cosmetic jars
- Displays
- Floor care
- Fragrance caps
- Lipstick containers
- Personal Care and Cosmetics
- Refrigerator interior components

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^{cm}

The CRADLE TO CRADLE CERTIFIED^{cm} Mark is a registered certification mark used under license through McDonough Braungart Design Chemistry (MBDC). MBDC is a global sustainability consulting and product certification firm. The CRADLE TO CRADLE® framework moves beyond the traditional goal of reducing the negative impacts of commerce ('eco-efficiency'), to a new paradigm of increasing its positive impacts ('eco-effectiveness'). At its core, Cradle to Cradle design perceives the safe and productive processes of nature's 'biological metabolism' as a model for developing a 'technical metabolism' flow of industrial materials. Product components can be designed for continuous recovery and reutilization as biological and technical nutrients within these metabolisms. For more information about MBDC and to obtain printable certificates for Eastman Copolyesters, visit <http://www.mbdc.com>.

Typical Properties

Property ^a	Test ^b Method	Typical Value, Units ^c
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)

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)

Optical Properties

Haze	D 1003	<1.0%
Regular Transmittance	D 1003	89%
Total Transmittance	D 1003	92%

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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