

Product Data Sheet

Estar™ Copolyester AN001, Natural

Application/Uses

- Cosmetics/personal care packaging
- Fragrance packaging

Key Attributes

- Easy to extrude, cut, print, and seal
- Effective barrier properties
- Excellent chemical resistance
- Excellent clarity
- Excellent colorability
- Good impact strength
- Good stiffness
- High gloss appearance
- Toughness

Product Description

Estar™ AN001 Copolyester has excellent appearance and is nearly water-clear. Its most outstanding features are its chemical resistance and processing capabilities. Exposure to aromatic oils often causes crazing or actual fracture of many polymer resins, but AN001 maintains its physical properties when exposed to these oils, and its appearance is virtually unchanged.

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	1.20
Mold Shrinkage Parallel to Flow, 3.2-mm (0.125-in.) thickness	D 955	0.002-0.006 mm/mm (0.002-0.006 in./in.)

Mechanical Properties

Tensile Stress @ Yield	D 638	47 MPa (6900 psi)
Tensile Stress @ Break	D 638	51 MPa (7400 psi)
Elongation @ Yield	D 638	5%
Elongation @ Break	D 638	320%
Flexural Modulus	D 790	2000 MPa (2.9 x 10 ⁵ psi)
Flexural Yield Strength	D 790	69 MPa (10000 psi)
Rockwell Hardness, R Scale	D 785	103
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	80 J/m (1.5 ft·lbf/in.)
@ -40°C (-40°F)	D 256	40 J/m (0.7 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	42 J (31 ft·lbf)
@ -40°C (-40°F)	D 3763	48 J (35 ft·lbf)

Thermal Properties

Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	73°C (164°F)
@ 1.82 MPa (264 psi)	D 648	65°C (149°F)

Optical Properties

Haze	D 1003	0.3%
Regular Transmittance	D 1003	89%
Total Transmittance	D 1003	91%

Typical Processing Conditions

Drying Temperature	70°C (160°F)
Drying Time	3 hrs
Processing Melt Temperature	230-280°C (450-530°F)
Mold Temperature	15-30°C (60-80°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 exactly to the values given.

Eastman and its marketing affiliates shall not be responsible for the use of this information, or of any product, method, or apparatus mentioned, and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products. No warranty is made of the merchantability of fitness of any product, and nothing herein waives any of the Seller's conditions of sale.

22-Jan-2002 11:31:10 AM