Product Data Sheet

Eastar™ Copolyester BR001

Application/Uses

- Oral hygiene
- Plastics for hygiene feminine products
- Toothbrushes

Product Description

Eastar™ BR001 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 BR001 maintains its physical properties when exposed to these oils, and its appearance is virtually unchanged. BR001 is specifically formulated to provide the optimal combination of chemical resistance, bristle retention, strength, stiffness, processability, clarity, colorability, and feel for toothbrushes. Under existing United States Food and Drug Administration(FDA) regulations, Eastar™ BR001 copolyester may lawfully be used to make food contact articles which comply with the specifications and conditions of use in 21 CFR 177.1240(a). Migration tests on BR001 samples meet the compliance requirements of 21 CFR 177.1240(3)(1), (2) and (3).

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

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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)

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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.*

General

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.

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