EASTMAN

Technical Data Sheet

DuraStar™ Polymer DS2010 Natural

Applications

- Consumer housewares-nfc
- Large appliances non-food contact
- Ophthalmics
- Packaging components non food contact
- Pens/stationary
- Point-of-purchase
- Small appliances non-food contact
- Sporting equipment

Key Attributes

- Excellent clarity
- Excellent flow
- Fast drying times
- Good chemical resistance
- Outstanding impact resistance
- Quick cycle times

Product Description

Durastar™ DS2010 polymer contains a mold release. It has excellent appearance and is nearly water-clear. Its most outstanding features are toughness, chemical resistance, and excellent processing characteristics. DS2010 has very good toughness as shown by Izod impact resistance. Exposure to aromatic oils often causes crazing or actual fracture of many polymer resins, but DS2010 maintains its physical properties when exposed to these oils, and its appearance is virtually unchanged. Easy to process, it flows readily and fills intricate molds. Under existing United States Food and Drug Administration (FDA) regulations, Durastar™ DS2010 may be used in food contact articles which comply with the specifications and conditions of use in 21 CFR 177.1240. This product is certified to ANSI/NSF Standard 51.

Typical Properties

Property[a]	Test Method[b]	Typical Value, Units[c]
Electrical Properties		
Arc Resistance	D 495	123 sec
Dielectric Constant		
1 kHz	D 150	2.6
1 MHz	D 150	2.5
10 kHz	D 150	2.6
100 kHz	D 150	2.5
Dissipation Factor		
1 kHz	D 150	0.006
1 MHz	D 150	0.015
10 kHz	D 150	0.012
100 kHz	D 150	0.015
Dielectric Strength, Short Time, 500 V/sec rate-of-rise	D 149	16.6 kV/mm (422 V/mil)
Surface Resistivity	D 257	10^{17} ohms/square
Volume Resistivity	D 257	10^{17} ohm·cm
Comparative Tracking Index	D 3638	700 V
General Properties		
Specific Gravity	D 792	1.2
Density	ISO 1183	1.19 g/cm^3
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 (ISO Method)		
Tensile Stress @ Yield	ISO 527	47 MPa
Tensile Stress @ Break	ISO 527	49 MPa
Elongation @ Yield	ISO 527	4 %
Elongation @ Break	ISO 527	210 %
Flexural Modulus	ISO 178	1750 MPa
Flexural Strength	ISO 178	64 MPa
Izod Impact Strength, Notched		
@ 23°C	ISO 180	29.6 kJ/m^2
@ -40°C	ISO 180	6.3 kJ/m^2
Impact Resistance (Puncture), Energy @ Max. Load		
@ 23°C	ISO 6603-2	71 J
@ -40°C	ISO 6603-2	55 J
Mechanical Properties		
Tensile Stress @ Yield	D 638	46 MPa (6700 psi)
Tensile Stress @ Break	D 638	53 MPa (7700 psi)
Elongation @ Yield	D 638	5 %
Elongation @ Break	D 638	310 %
Flexural Modulus	D 790	1900 MPa (2.75 x 10^5 psi)
Flexural Yield Strength	D 790	67 MPa (9700 psi)
Rockwell Hardness, R Scale	D 785	105
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	370 J/m (7 ft·lbf/in.)
@ -40°C (-40°F)	D 256	60 J/m (1.1 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	45 J (33 ft·lbf)
@ -40°C (-40°F)	D 3763	48 J (35 ft·lbf)
Optical Properties		
Haze	D 1003	0.3 %
Regular Transmittance	D 1003	89 %
Total Transmittance	D 1003	91 %
Thermal Properties (ISO Method)		
Deflection Temperature		
@ 0.455 MPa (66 psi)	ISO 75	73 °C
@ 1.82 MPa (264 psi)	ISO 75	66 °C
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)
UL Flammability Classification[d]		
3.0 mm specimen	UL 94	94V-2
Typical Processing Conditions		
Drying Temperature		70 °C (160 °F)
Drying Time		3 hrs
Processing Melt Temperature		250-290 °C (480-550 °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.*
[d]*For color AT*

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.

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