

Product Data Sheet

DuraStar™ Polymer DS1010, Natural

Application/Uses

- Appliances
- Floor care
- Furniture/Furniture trim
- Housewares
- Refrigerator interior components
- Toys/Sporting goods
- Washing machine components
- Writing instruments

Key Attributes

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

Product Description

Durastar™ DS1010 polymer contains a mold release. It has excellent appearance and clarity. Its most outstanding features are chemical resistance and excellent processing characteristics. Exposure to aromatic oils often causes crazing or actual fracture of many polymer resins, but DS1010 maintains its physical properties when exposed to these oils, and its appearance is virtually unchanged. Easy to process, it flows readily, fills intricate molds, and is well suited for thick-wall applications. Under existing United States Food and Drug Administration (FDA) regulations, Durastar™ DS1010 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 ^b Method	Typical Value, Units ^c
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		
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	300%
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)

Mechanical Properties (ISO Method)

Tensile Strength @ Yield	ISO 527	47 MPa
Tensile Strength @ Break	ISO 527	46 MPa
Elongation @ Yield	ISO 527	4%
Elongation @ Break	ISO 527	200%
Tensile Modulus	ISO 527	1800 MPa
Flexural Modulus	ISO 178	1850 MPa
Flexural Strength	ISO 178	65 MPa
Izod Impact Strength, Notched		
@ 23°C	ISO 180	7.8 kJ/m ²
@ -40°C	ISO 180	4.8 kJ/m ²
Impact Resistance (Puncture), Energy @ Max. Load		
@ 23°C	ISO 6603-2	58.7 J
@ -40°C	ISO 6603-2	52.6 J

Thermal Properties

Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	75°C (167°F)
@ 1.82 MPa (264 psi)	D 648	65°C (149°F)
UL Flammability Classification ^d 3.0 mm specimen	UL 94	94V-2

Thermal Properties (ISO Method)

Deflection Temperature		
@ 0.455 MPa (66 psi)	ISO 75	72°C
@ 1.82 MPa (264 psi)	ISO 75	66°C

Optical Properties

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

Typical Processing Conditions	
Drying Temperature	71°C (160°F)
Drying Time	3-4 hrs
Processing Melt Temperature	232-277°C (450-530°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.

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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