EASTMAN

Product Data Sheet

DuraStar™ Polymer MN621, Natural

Application/Uses

- Blood Contact
- Drug Delivery
- IV Components
- Medical
- Surgical Instruments

Key Attributes

- Chemical resistance to most medical solvents including lipids and IPA
- Ease of processing
- Gamma and E-beam color stability

Product Description

DuraStar™ Polymer MN621 has been tested for FDA/ISO 10993 and USP Class VI Biological Evaluation testing after Gamma and EtO sterilization. It contains a mold release to improve ejection. It processes easily and requires minimal drying time. It has superior toughness, high clarity and good chemical resistance.

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	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)

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

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)

Thermal Properties (ISO Method)		
Deflection Temperature		
@ 0.455 MPa (66 psi)	ISO 75	73°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	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.*

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 Medical Disclaimer
It is the responsibility of the medical device manufacturer ("Manufacturer") to determine the suitability of all component parts and raw materials, including any Eastman product, used in its final product in order to ensure safety and compliance with requirements of the United States Food and Drug Administration (FDA) or other international regulatory agencies.

Eastman Chemical Company products have not been designed for nor are they promoted for end uses that would be categorized by either the United States FDA or by the International Standards Organization (ISO) as implant devices. Eastman products are not intended for use in the following applications: (1) in any bodily implant applications for greater than 30 days, based on FDA-Modified ISO-10993, Part 1 "Biological Evaluation of Medical Devices" tests (including any cosmetic, reconstructive or reproductive implant applications); (2) in any cardiac prosthetic device application, regardless of the length of time involved, including, without limitation, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass assisted devices, or (3) as any critical component in any medical device that supports or sustains human life.

Eastman Chemical Company products offered for the medical market have met selected FDA-Modified ISO-10993, Part 1 "Biological Evaluation of Medical Devices" tests with human tissue contact time of 30 days or less. The tests include: cytotoxicity, sensitization, irritation or intracutaneous reactivity, systemic toxicity (acute), subchronic toxicity (sub-acute), implantation, hemocompatibility. The Manufacturer is responsible for the biological evaluation of the finished medical device.

The suitability of an Eastman Product in a given end-use environment is dependent upon various conditions including, without limitation, chemical compatibility, temperature, part design, sterilization method, residual stresses, and external loads. It is the responsibility of the Manufacturer to evaluate its final product under actual end-use requirements and to adequately advise and warn purchasers and users thereof.

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