

## Product Data Sheet

### *Eastalloy* Polymer DA003-8999K, Clear

#### Application/Uses

- Appliances
- Blood Therapy
- Drug Delivery
- Flexible medical
- Floor care
- IV Components
- Small appliance components
- Surgical Instruments

#### Key Attributes

- Chemical resistance to most medical solvents including lipids and IPA
- Elevated in-use temperature resistance
- Gamma and E-beam color stability
- Good chemical resistance
- Good clarity
- Heat resistance
- Sterilizable with ethylene oxide, electron beam, and gamma rays
- Tough, excellent impact strength
- Wide range of clear tints and opaque colors

#### Product Description

*Eastalloy* Polymer DA003 has been tested for FDA/ISO 10993 and USP Class VI Biological Evaluation testing after Gamma and EtO sterilization. *Eastalloy* DA003-8999K Polymer is a clear copolyester/polycarbonate alloy. It affords the consumer excellent impact strength, chemical resistance, dimensional stability, low shrinkage rates and other enhanced physical properties advantages.

#### Typical Properties

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##### General Properties (ASTM Method)

Specific Gravity	D 792	1.20
Water Absorption, 24 h immersion	D 570	0.13%
Mold Shrinkage Parallel to Flow, 3.2-mm (0.125-in.) thickness	D 955	0.005-0.007 mm/mm (0.005-0.007 in./in.)

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##### Mechanical Properties (ASTM Method)

Tensile Stress @ Yield	D 638	56 MPa (8100 psi)
Tensile Stress @ Break	D 638	60 MPa (8700 psi)
Elongation @ Yield	D 638	6%
Elongation @ Break	D 638	150%
Flexural Modulus	D 790	2140 MPa (3.1 x 10 <sup>5</sup> psi )
Flexural Yield Strength	D 790	86 MPa (12500 psi)
Rockwell Hardness, R Scale	D 785	117
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	NB
@ -40°C (-40°F)	D 256	75 J/m (1.4 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	51 J (38 ft·lbf)
@ -40°C (-40°F)	D 3763	46 J (34 ft·lbf)

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### Thermal Properties (ASTM Method)

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Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	103°C (218°F)
@ 1.82 MPa (264 psi)	D 648	90°C (194°F)
Vicat Softening Temperature @ 1 kg load	D 1525	118°C (244°F)
Specific Heat		
@ 60°C (140°F)	DSC	1.38 kJ/kg·K (0.33 Btu/lb·°F)
@ 240°C (464°F)	DSC	2.18 kJ/kg·K (0.52 Btu/lb·°F)

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### Electrical Properties (ASTM Method)

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Dielectric Constant		
1 kHz	D 150	2.3
1 MHz	D 150	2.1
Dissipation Factor		
1 kHz	D 150	0.002
1 MHz	D 150	0.008
Arc Resistance	D 495	143 sec
Volume Resistivity	D 257	10 <sup>15</sup> ohm·cm
Surface Resistivity	D 257	10 <sup>16</sup> ohms/square
Dielectric Strength, Short Time, 500 V/sec rate-of-rise	D 149	17.3 kV/mm (440 V/mil)
Comparative Tracking Index	D 3638	>600 V

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### Optical Properties (ASTM Method)

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Haze	D 1003	3.6%
Regular Transmittance	D 1003	77%
Total Transmittance	D 1003	81%

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### General Properties (ISO Method)

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Density	ISO 1183	1.20 g/cm <sup>3</sup>
Water Absorption, 24 h immersion	ISO 62	0.13%

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### Mechanical Properties (ISO Method)

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Tensile Stress @ Yield	ISO 527	56 MPa
Tensile Stress @ Break	ISO 527	56 MPa
Elongation @ Yield	ISO 527	5.4%
Elongation @ Break	ISO 527	130%
Flexural Modulus	ISO 178	2100 MPa
Flexural Yield Strength	ISO 178	81 MPa

Izod Impact Strength, Notched		
@ 23°C	ISO 180	10 kJ/m <sup>2</sup>
@ -40°C	ISO 180	8.3 kJ/m <sup>2</sup>

Impact Resistance (Puncture), Energy @ Max. Load		
@ 23°C	ISO 6603-2	19 J
@ -40°C	ISO 6603-2	23 J

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### Thermal Properties (ISO Method)

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Deflection Temperature		
@ 0.45 MPa	ISO 75	103°C
@ 1.80 MPa	ISO 75	90°C

Vicat Softening Temperature		
@ 1 kg load	ISO 306	118°C
@ 5 kg load	ISO 306	110°C

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### Electrical Properties (UL Method)

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High Voltage Arc Tracking Resistance	UL 746A	38 mm/min (1.5 in./min)
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### Thermal Properties (UL Method)

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UL Flammability Classification <sup>d</sup>		
1.6 mm (0.0625 in.) specimen	UL 94	94HB
3.2 mm (0.125 in.) specimen	UL 94	94V-2

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### Typical Processing Conditions

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Drying Temperature	93°C (200°F)
Drying Time	4-6 hrs
Processing Melt Temperature	271-293°C (520-560°F)
Mold Temperature	32-66°C (90-150°F)

#### General

All ISO tests are run @ 4-mm thickness with the exception of Impact Resistance, which is run @ 2-mm thickness.

#### 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,

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