

## Eastman EASTALLOY Polymer DA003-8999K, Clear Alloy (discontinued \*\*)

Category : Polymer , Film , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET)

### Material Notes:

Properties below based on a film thickness of 250 microns. CO2 Permeability is 49 cm<sup>3</sup>-mm/m<sup>2</sup>-24h-atm per ASTM D 1434. Product Description: 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. Applications: Medical Technical Data Sheet 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. Information provided by Eastman Chemical.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Eastman-EASTALLOY-Polymer-DA003-8999K-Clear-Alloy-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Eastman-EASTALLOY-Polymer-DA003-8999K-Clear-Alloy-nbspdiscontinued-.php)

Physical Properties	Metric	English	Comments
Density	1.27 g/cc	0.0459 lb/in <sup>3</sup>	ASTM D792 and ISO 1183D
Water Absorption	0.13 %	0.13 %	24 hour immersion; ISO 62
Moisture Vapor Transmission	6.00 cc-mm/m <sup>2</sup> -24hr-atm	15.2 cc-mil/100 in <sup>2</sup> -24hr-atm	F 372 Test conducted at 38°C (100°F) and 100% relative humidity.
Oxygen Transmission	10.0 cc-mm/m <sup>2</sup> -24hr-atm	25.4 cc-mil/100 in <sup>2</sup> -24hr-atm	ASTM D3985
Viscosity Measurement	0.70	0.70	0.7 for films per EMN-A-AC-G-V-1
	0.70	0.70	inherent viscosity of pellets

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	109	109	ISO 2039-2
Tensile Strength, Ultimate	28.0 MPa	4060 psi	ISO 527
Film Tensile Strength at Yield, MD	52.0 MPa	7540 psi	ASTM D882
Film Tensile Strength at Yield, TD	52.0 MPa	7540 psi	ASTM D882
Tensile Strength, Yield	50.0 MPa	7250 psi	ISO 527
Film Elongation at Break, MD	400 %	400 %	ASTM D882
Film Elongation at Break, TD	400 %	400 %	ASTM D882
Film Elongation at Yield, MD	4.0 %	4.0 %	ASTM D882
Film Elongation at Yield, TD	4.0 %	4.0 %	ASTM D882
Elongation at Break	100 %	100 %	ISO 527

Mechanical Properties	Metric <sup>Pa</sup>	English	Comments
Flexural Yield Strength	68.0 MPa	9860 psi	ISO 178
Flexural Modulus	2.00 GPa	290 ksi	ISO 178
Secant Modulus, MD	1.90 GPa	276 ksi	ASTM D882
Secant Modulus, TD	1.90 GPa	276 ksi	ASTM D882
Izod Impact, Notched	1.01 J/cm	1.89 ft-lb/in	ASTM D256
	0.370 J/cm @Temperature -40.0 °C	0.693 ft-lb/in @Temperature -40.0 °F	ASTM D256
Elmendorf Tear Strength, MD	13.7 g/micron	348 g/mil	ASTM D1922
Elmendorf Tear Strength, TD	16.7 g/micron	424 g/mil	ASTM D1922
Dart Drop Test	400 g	0.882 lb	Modified 12.7 mm (0.5 in.) dia. head, 127 mm (5 in.) dia. clamp, 660 mm (26 in.) drop. Value at -18°C (0°F) is 500 g.; ASTM D1709A
Film Tensile Strength at Break, MD	59.0 MPa	8560 psi	ASTM D882
Film Tensile Strength at Break, TD	55.0 MPa	7980 psi	ASTM D882

Thermal Properties	Metric	English	Comments
CTE, linear	51.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature -30.0 - 40.0 °C	28.3 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature -22.0 - 104 °F	ASTM D696
Specific Heat Capacity	1.30 J/g-°C @Temperature 60.0 °C	0.311 BTU/lb-°F @Temperature 140 °F	
	1.76 J/g-°C @Temperature 100 °C	0.421 BTU/lb-°F @Temperature 212 °F	
	1.88 J/g-°C @Temperature 150 °C	0.449 BTU/lb-°F @Temperature 302 °F	
	1.97 J/g-°C @Temperature 200 °C	0.471 BTU/lb-°F @Temperature 392 °F	
	2.05 J/g-°C @Temperature 250 °C	0.490 BTU/lb-°F @Temperature 482 °F	
Thermal Conductivity	0.210 W/m-K	1.46 BTU-in/hr-ft <sup>2</sup> -°F	ASTM C177

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	79.0 °C	158 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	64.0 °C	147 °F	ASTM D648
Vicat Softening Point	85.0 °C	185 °F	ASTM D1525
Glass Transition Temp, Tg	80.0 °C	176 °F	DSC

Optical Properties	Metric	English	Comments
Haze	0.80 %	0.80 %	ASTM D1003
Gloss	108 %	108 %	at 45°; ASTM D 2457
Transmission, Visible	85 %	85 %	per ASTM D1746
	89 %	89 %	Regular transmittance per ASTM D 1003 Modified.
	91 %	91 %	Total Transmittance; ASTM D 1003

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	ASTM D257
Surface Resistance	1.00e+16 ohm	1.00e+16 ohm	ASTM D257
Dielectric Constant	2.4	2.4	ASTM D 150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	2.6	2.6	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	16.0 kV/mm	406 kV/in	Short Time, 500 V/sec rate-of-rise; ASTM D 149
Dissipation Factor	0.0050	0.0050	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.020	0.020	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Arc Resistance	143 sec	143 sec	ASTM D495

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