

Product Data Sheet

Eastar™ Copolyester 6763

Application/Uses

- Blister packaging
- Blood Contact
- Blown film
- Credit cards
- Debit cards
- Deodorant packaging
- Device Packaging
- Drug Delivery
- Electronic packaging
- Fabricated Boxes
- Flexible packaging
- Food packaging
- Furniture/Furniture trim
- Gaming cards
- Gift cards
- Identification cards
- IV Components
- IV Containers
- Labware
- Laminating
- Phone cards
- Plastic Cards
- Rigid Medical Packaging
- Shrink film
- Signs
- Smart cards
- Suction & Drainage
- Toys/Sporting goods
- Tubing
- Writing instruments

Key Attributes

- Easy primary & secondary operations
- Excellent clarity
- Excellent toughness
- Gamma, ebeam, ETO sterilization stable

Product Description

Eastar™ copolyester 6763 is a clear, amorphous material. Because of its clarity, toughness and good melt strength at processing temperatures, it is useful in a variety of processing techniques including film and sheet extrusion. Eastar™ Copolyester 6763 may be colored using color concentrates, dry colors or liquid colorants.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

The GREENGUARD INDOOR AIR QUALITY CERTIFIED® Mark is a registered certification mark used under license through the GREENGUARD Environmental Institute (GEI). GEI is an industry-independent, non-profit organization that oversees the GREENGUARD Certification Program. The GREENGUARD Certification Program is an industry independent, third-party testing program for low-emitting products and materials for indoor environments. For more information about GEI and to obtain printable certificates for Eastman™ Copolyesters, visit www.greenguard.org. Choose Eastman Chemical Company under the Manufacturer category and click search to display a list of our products.

This product has been CRADLE TO CRADLE CERTIFIED^{cm} Silver.

The CRADLE TO CRADLE CERTIFIED^{cm} Mark is a registered certification mark used under license through McDonough Braungart Design Chemistry (MBDC). MBDC is a global sustainability consulting and product certification firm. The CRADLE TO CRADLE® framework moves beyond the traditional goal of reducing the negative impacts of commerce ('eco-efficiency'), to a new paradigm of increasing its positive impacts ('eco-effectiveness'). At its core, Cradle to Cradle design perceives the safe and productive processes of nature's 'biological metabolism' as a model for developing a 'technical metabolism' flow of industrial materials. Product components can be designed for continuous recovery and reutilization as biological and technical nutrients within these metabolisms. For more information about MBDC and to obtain printable certificates for Eastman Copolyesters, visit www.mbdc.com. Choose Eastman Chemical Company under Company Name in C2C Certified products to display a list of our products.

Typical Properties

Property ^a	Test ^b Method	Typical Value, Units ^c
Film Properties		
Thickness of Film Tested	D 374	250 microns (10 mils)
Density	D 1505	1.27 g/cm ³
Haze	D 1003	0.8%
Gloss @ 45°	D 2457	108
Transparency	D 1746	85%
Regular Transmittance	D 1003 Modified	89%
Total Transmittance	D 1003 Modified	91%
Water Vapor Transmission Rate ^d	F 1249	7 g/m ² ·24h (0.5 g/100in. ² ·24h)
Gas Permeability, CO ₂	D 1434	49 cm ³ ·mm/m ² ·24h·atm (125 cm ³ ·mil/100in. ² ·24h·atm)
Gas Permeability, O ₂	D 3985	10 cm ³ ·mm/m ² ·24h·atm (25 cm ³ ·mil/100in. ² ·24h·atm)
Elmendorf Tear Resistance		
M.D.	D 1922	13.7 N (1400 gf)
T.D.	D 1922	16.7 N (1700 gf)
PPT Tear Resistance		
M.D.	D 2582	93 N (21 lbf)
T.D.	D 2582	93 N (21 lbf)
Tear Propagation Resistance, Split Tear Method		
@ 254 mm/min (10 in./min) M.D.	D 1938	36 N/mm (205 lbf/in.)
@ 254 mm/min (10 in./min) T.D.	D 1938	36 N/mm (205 lbf/in.)
Tear Resistance, Trouser @ 200 mm/min		
M.D.	ISO 6383-1	36 N/mm (205 lbf/in.)

T.D.	ISO 6383-1	36 N/mm (205 lbf/in.)
Tensile Strength @ Yield		
M.D.	D 882	52 MPa (7500 psi)
T.D.	D 882	52 MPa (7500 psi)
Tensile Strength @ Break		
M.D.	D 882	59 MPa (8600 psi)
T.D.	D 882	55 MPa (8000 psi)
Elongation @ Yield		
M.D.	D 882	4%
T.D.	D 882	4%
Elongation @ Break		
M.D.	D 882	400%
T.D.	D 882	400%
Tensile Modulus		
M.D.	D 882	1900 MPa (2.8 x 10 ⁵ psi)
T.D.	D 882	1900 MPa (2.8 x 10 ⁵ psi)
Dart Impact ^e		
@ 23°C (73°F)	D 1709A Modified	400 g
@ -18°C (0°F)	D 1709A Modified	500 g

Mechanical Properties (Injection Molded), ASTM Method		
Specific Gravity	D 792	1.27
Water Absorption, 24 h immersion	D 570	0.13%
Tensile Stress @ Break	D 638	28 MPa (4100 psi)
Tensile Stress @ Yield	D 638	50 MPa (7300 psi)
Elongation @ Break	D 638	130%
Tensile Modulus	D 638	2100 MPa (3.0 x 10 ⁵ psi)
Flexural Modulus	D 790	2100 MPa (3.0 x 10 ⁵ psi)
Flexural Yield Strength	D 790	70 MPa (10200 psi)
Rockwell Hardness, R Scale	D 785	106
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	101 J/m (1.9 ft·lbf/in.)
@ -40°C (-40°F)	D 256	37 J/m (0.7 ft·lbf/in.)
Impact Strength, Unnotched ^f		
@ 23°C (73°F)	D 4812	NB
@ -20°C (-4°F)	D 4812	NB
@ -30°C (-22°F)	D 4812	NB
@ -40°C (-40°F)	D 4812	NB
Impact Resistance (Puncture), Energy @ Max. Load		
2.5-mm (0.100-in.) Thick Plaques, @ 23°C	D 3763	28 J (21 ft·lbf)

(73°F)		
2.5-mm (0.100-in.) Thick Plaques, @ -40°C (-40°F)	D 3763	41 J (30 ft·lbf)
3.2-mm (0.125-in.) Thick Plaques @ 23°C (73°F)	D 3763	33 J (24 ft·lbf)
3.2-mm (0.125-in.) Thick Plaques @ -40°C (-40°F)	D 3763	50 J (37 ft·lbf)

Mechanical Properties (Injection Molded), ISO Method

Density	ISO 1183, Method D	1.27 g/cm ³
Water Absorption, 24 h immersion	ISO 62	0.13%
Tensile Stress @ Break	ISO 527	28 MPa
Tensile Stress @ Yield	ISO 527	50 MPa
Elongation @ Break	ISO 527	100%
Tensile Modulus	ISO 527	2100 MPa
Flexural Modulus	ISO 178	2000 MPa
Flexural Yield Strength	ISO 178	68 MPa
Rockwell Hardness, R Scale	ISO 2039-2	109
Izod Impact Strength, Notched, Type 1 Specimen, Type A Notch		
@ 23°C	ISO 180	6.2 kJ/m ²
@ -40°C	ISO 180	4.2 kJ/m ²
Impact Strength, Unnotched, Type 1 Specimen g		
@ 23°C	ISO 180	NB kJ/m ²
@ -20°C	ISO 180	NB kJ/m ²
@ -30°C	ISO 180	NB kJ/m ²
@ -40°C	ISO 180	NB kJ/m ²
Impact Resistance (Puncture), Energy @ Max. Load h		
2.5-mm Thick Plaques @ 23°C	ISO 6603-2	40 J
2.5-mm Thick Plaques @ -40°C	ISO 6603-2	35 J
3.2-mm Thick Plaques @ 23°C	ISO 6603-2	44 J
3.2-mm Thick Plaques @ -40°C	ISO 6603-2	36 J

Thermal Properties

Deflection Temperature		
@ 0.455 MPa (66 psi)	D 648	70°C (158°F)
@ 1.82 MPa (264 psi)	D 648	64°C (147°F)
Vicat Softening Temperature	D 1525	85°C (185°F)
Thermal Conductivity	C 177	0.21 W/m·K (1.5 Btu·in./h·ft ² ·°F)
Glass Transition Temperature (T _g)	DSC	80°C (176°F)
Specific Heat		
@ 60°C (140°F)	DSC	1.30 kJ/kg·K (0.31 Btu/lb·°F)

@ 100°C (212°F)	DSC	1.76 kJ/kg·K (0.42 Btu/lb·°F)
@ 150°C (302°F)	DSC	1.88 kJ/kg·K (0.45 Btu/lb·°F)
@ 200°C (392°F)	DSC	1.97 kJ/kg·K (0.47 Btu/lb·°F)
@ 250°C (482°F)	DSC	2.05 kJ/kg·K (0.49 Btu/lb·°F)
Coefficient of Linear Thermal Expansion ⁱ	D 696	5.1 x 10 ⁻⁵ /°C (mm/mm·°C) (2.8 x 10 ⁻⁵ /°F (in./in.·°F))

Electrical Properties

Dielectric Constant

1 kHz	D 150	2.6
1 MHz	D 150	2.4

Dissipation Factor

1 kHz	D 150	0.005
1 MHz	D 150	0.02

Arc Resistance

D 495	158 sec
-------	---------

Volume Resistivity

D 257	10 ¹⁵ ohm·cm
-------	-------------------------

Surface Resistivity

D 257	10 ¹⁶ ohms/square
-------	------------------------------

Dielectric Strength, Short Time, 500 V/sec rate-of-rise	D 149	16 kV/mm (410 V/mil)
---	-------	----------------------

^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 Test conducted at 38°C (100°F) and 100% relative humidity.

^e 12.7 mm (0.5 in.) dia. head, 127 mm (5 in.) dia. clamp, 660 mm (26 in.) drop

^f Nonbreak as defined by ASTM D 4812 with 3.2-mm specimens.

^g Nonbreak as defined by ISO 180 with 4-mm specimens.

^h Testing based on ISO 6603-2 using a striker diameter of 20 mm, a support and clamp diameter of 40 mm, and a velocity of 4.1 m/s.

ⁱ -30°C to 40°C (-22°F to 104°F)

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.

Eastman and its marketing affiliates shall not be responsible for the use of this information, or of any product, method, or apparatus mentioned, and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products. No warranty is made of the merchantability of fitness of any product, and nothing herein waives any of the Seller's conditions of sale.

17-Jan-2008 1:29:29 PM