Eastar™ 6763

Eastman Chemical Company - Copolyester

Friday, January 24, 2025

General Information

Product Description

Eastar™ 6763 copolyester meets ISO 10993 and/or USP Class VI biocompatibility requirement; Food Contact Status compliant. Eastar 6763 is a clear, amorphous material that can be molded and extruded with ease. Its excellent performance properties include clarity, toughness, good melt strength, no dusting, no stress whitening, good heat sealability, easy cutting and thermoforming. Eastar 6763 may be colored using color concentrates, dry colors, or liquid colorants. Eastar 6763 can be safely sterilized with proper ethylene oxide, radiation, or electron beam methods without property loss or color shift.

Eastar 6763 provides:

- Superior, long-term clarity provides easy identification of instruments
- Excellent puncture resistance and impact toughness ensure package integrity
- Excellent ability to be subjected to several methods of sterilization, providing flexibility and security to the device manufacturer
- Excellent optical and physical property stability post sterilization
- Good melt strength offers wide processing latitude and ease in thermoforming

The production and trimming of rigid medical trays made from sheet of Eastar 6763 results in little or no dust or particulates. After the thermoformed trays are made, they are put in polybags. The polybags of trays are then placed in protective boxes for storage or shipment. As long as the polybags in the protective boxes are intact and no outside contamination is evident, the thermoformer or medical device manufacturer should not need to clean the tray prior to packaging a device and sealing the package. If contamination is found on the medical trays and cleaning is required, use a lint-free towel. Blowing the tray out with filtered, deionized, non-lubricated air is also acceptable, assuming this does not stir up dust from the surrounding area. Using alcohol, which could cause crazing, or water, which would not evaporate, is not recommended.

This product has received a Platinum level Material Health Certificate from the Cradle to Cradle Products Innovation Institute. A Material Health Certificate is awarded to products that meet the Material Health requirements of the multi-attribute Cradle to Cradle Certified™ Product Standard. The Cradle to Cradle Products Innovation Institute is a nonprofit organization that administers the publicly available Cradle to Cradle Certified™ Product Standard, which provides designers and manufacturers with criteria and requirements for continually improving product materials and manufacturing processes. The Material Health Certificate provides manufacturers with a trusted way to communicate their efforts to identify and replace chemicals of concern in their products. For more information about Cradle to Cradle certification and to obtain printable certificates for Eastman copolyesters, visit www.c2ccertified.org. Search for Eastman Chemical Company in the Material Health Certificate Registry.

Key Attributes

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

Applications

- Flexible medical device packaging
- Pharmaceutical packaging
- Rigid medical packaging

General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America

Eastar™ 6763

Eastman Chemical Company - Copolyester

General			
Features	• Amorphous • Biocompatible • E-beam Sterilizable • Ethylene Oxide Sterilizable • Food Contact Acceptable	• Good Colorability • Good Melt Strength • Good Stability • Good Sterilizability • Good Toughness	• Heat Sealable • High Clarity • Puncture Resistant • Radiation Sterilizable • Stress Whitening Resistant
Uses	• Film • Medical Devices • Medical Packaging • Medical/Healthcare Applications	• Packaging • Pharmaceutical Packaging • Rigid Packaging • Sheet	• Thermoforming Applications • Trays
Agency Ratings	• ISO 10993	• USP Class VI	
Appearance	• Clear/Transparent		
Forms	• Pellets		
Processing Method	• Extrusion • Film Extrusion	• Sheet Extrusion • Thermoforming	

ASTM & ISO Properties [1]

Physical	Typical Value (English)		Typical Value (SI)		Test Method
Density / Specific Gravity					
--	1.27		1.27		ASTM D792
73°F (23°C)	1.27	g/cm³	1.27	g/cm³	ISO 1183/D
--	1.27	g/cm³	1.27	g/cm³	ASTM D1505
Water Absorption					
24 hr, 73°F (23°C), 50% RH	0.13	%	0.13	%	ASTM D570
24 hr, 73°F (23°C)	0.13	%	0.13	%	ISO 62
Mechanical	**Typical Value (English)**		**Typical Value (SI)**		**Test Method**
Tensile Modulus (73°F (23°C))	305000	psi	2100	MPa	ASTM D638 ISO 527-1
Tensile Strength					ASTM D638 ISO 527-2
Yield, 73°F (23°C)	7250	psi	50.0	MPa	
Break, 73°F (23°C)	4060	psi	28.0	MPa	
Tensile Elongation					
Break, 73°F (23°C)	130	%	130	%	ASTM D638
Break, 73°F (23°C)	100	%	100	%	ISO 527-2
Flexural Modulus					
73°F (23°C)	305000	psi	2100	MPa	ASTM D790
73°F (23°C)	290000	psi	2000	MPa	ISO 178
Flexural Stress					
73°F (23°C)	9860	psi	68.0	MPa	ISO 178
Yield, 73°F (23°C)	10200	psi	70.0	MPa	ASTM D790
Tear Resistance					ASTM D2582
MD : 73°F (23°C), 9.8 mil (250.0 µm)	93	N	93	N	
TD : 73°F (23°C), 9.8 mil (250.0 µm)	93	N	93	N	
Films	**Typical Value (English)**		**Typical Value (SI)**		**Test Method**
Film Thickness - Tested	9.8	mil	250	µm	ASTM D374

Eastar™ 6763

Eastman Chemical Company - Copolyester

Films	Typical Value	(English)	Typical Value	(SI)	Test Method
Secant Modulus					ASTM D882
MD : 9.8 mil (250 µm)	276000	psi	1900	MPa	
TD : 9.8 mil (250 µm)	276000	psi	1900	MPa	
Tensile Strength					ASTM D882
MD : Yield, 9.8 mil (250 µm)	7540	psi	52.0	MPa	
TD : Yield, 9.8 mil (250 µm)	7540	psi	52.0	MPa	
MD : Break, 9.8 mil (250 µm)	8560	psi	59.0	MPa	
TD : Break, 9.8 mil (250 µm)	7980	psi	55.0	MPa	
Tensile Elongation					ASTM D882
MD : Yield, 9.8 mil (250 µm)	4.0	%	4.0	%	
TD : Yield, 9.8 mil (250 µm)	4.0	%	4.0	%	
MD : Break, 9.8 mil (250 µm)	400	%	400	%	
TD : Break, 9.8 mil (250 µm)	400	%	400	%	
Dart Drop Impact [2]					ASTM D1709A
0°F (-18°C), 9.8 mil (250 µm)	500	g	500	g	
73°F (23°C), 9.8 mil (250 µm)	400	g	400	g	
Elmendorf Tear Strength					ASTM D1922
MD : 9.8 mil (250 µm)	1400	g	1400	g	
TD : 9.8 mil (250 µm)	1700	g	1700	g	
Trouser Tear Resistance [3]					ISO 6383-1
MD	206	lbf/in	36.0	N/mm	
TD	206	lbf/in	36.0	N/mm	
Oxygen Permeability					ASTM D3985
73°F (23°C), 9.8 mil (250 µm), 50% RH	25	cm³·mil/ 100in²/atm/24 hr	10	cm³·mm/m²/atm/ 24 hr	
Water Vapor Transmission Rate					ASTM F1249
100°F (38°C), 100% RH, 9.8 mil (250 µm)	0.45	g/100 in²/24 hr	7.0	g/m²/24 hr	
Carbon Dioxide Permeability					ASTM D1434
73°F (23°C), 9.8 mil (250.0 µm)	120	cm³·mil/ 100in²/atm/24 hr	49	cm³·mm/m²/atm/ 24 hr	
Tear Propagation Resistance [4]					ASTM D1938
MD : 73°F (23°C), 9.8 mil (250.0 µm)	210	lbf/in	36	kN/m	
TD : 73°F (23°C), 9.8 mil (250.0 µm)	210	lbf/in	36	kN/m	

Impact	Typical Value	(English)	Typical Value	(SI)	Test Method
Notched Izod Impact					
-40°F (-40°C)	0.69	ft·lb/in	37	J/m	ASTM D256
73°F (23°C)	1.9	ft·lb/in	100	J/m	ASTM D256
-40°F (-40°C)	2.0	ft·lb/in²	4.2	kJ/m²	ISO 180
73°F (23°C)	3.0	ft·lb/in²	6.2	kJ/m²	ISO 180

Eastar™ 6763

Eastman Chemical Company - Copolyester

Impact	Typical Value (English)		Typical Value (SI)		Test Method
Unnotched Izod Impact					
-40°F (-40°C), 0.126 in (3.20 mm)	No Break		No Break		ASTM D4812
-22°F (-30°C), 0.126 in (3.20 mm)	No Break		No Break		ASTM D4812
-4°F (-20°C), 0.126 in (3.20 mm)	No Break		No Break		ASTM D4812
73°F (23°C), 0.126 in (3.20 mm)	No Break		No Break		ASTM D4812
-40°F (-40°C) [5]	No Break		No Break		ISO 180/1U
-22°F (-30°C) [5]	No Break		No Break		ISO 180/1U
-4°F (-20°C) [5]	No Break		No Break		ISO 180/1U
73°F (23°C) [5]	No Break		No Break		ISO 180/1U
Instrumented Dart Impact					
-40°F (-40°C), 0.0984 in (2.50 mm), Energy at Peak Load	363	in·lb	41.0	J	ASTM D3763
-40°F (-40°C), 0.126 in (3.20 mm), Energy at Peak Load	443	in·lb	50.0	J	ASTM D3763
73°F (23°C), 0.0984 in (2.50 mm), Energy at Peak Load	248	in·lb	28.0	J	ASTM D3763
73°F (23°C), 0.126 in (3.20 mm), Energy at Peak Load	292	in·lb	33.0	J	ASTM D3763
-40°F (-40°C), 0.0984 in (2.50 mm), Energy to Peak Force [6, 7]	25.8	ft·lb	35.0	J	ISO 6603-2
-40°F (-40°C), 0.126 in (3.20 mm), Energy to Peak Force [6, 7]	26.6	ft·lb	36.0	J	ISO 6603-2
73°F (23°C), 0.0984 in (2.50 mm), Energy to Peak Force [6, 7]	29.5	ft·lb	40.0	J	ISO 6603-2
73°F (23°C), 0.126 in (3.20 mm), Energy to Peak Force [6, 7]	32.5	ft·lb	44.0	J	ISO 6603-2

Hardness	Typical Value (English)		Typical Value (SI)		Test Method
Rockwell Hardness					
R-Scale, 73°F (23°C)	106		106		ASTM D785
R-Scale, 73°F (23°C)	109		109		ISO 2039-2

Thermal	Typical Value (English)		Typical Value (SI)		Test Method
Deflection Temperature Under Load					ASTM D648
66 psi (0.45 MPa), Unannealed	158	°F	70.0	°C	
264 psi (1.8 MPa), Unannealed	147	°F	64.0	°C	
Glass Transition Temperature	176	°F	80.0	°C	DSC
Vicat Softening Temperature	185	°F	85.0	°C	ASTM D1525
CLTE - Flow (-22 to 104°F (-30 to 40°C))	2.8E-5	in/in/°F	5.1E-5	cm/cm/°C	ASTM D696
Specific Heat					DSC
140°F (60°C)	0.311	Btu/lb/°F	1300	J/kg/°C	
212°F (100°C)	0.421	Btu/lb/°F	1760	J/kg/°C	
302°F (150°C)	0.449	Btu/lb/°F	1880	J/kg/°C	
392°F (200°C)	0.471	Btu/lb/°F	1970	J/kg/°C	
482°F (250°C)	0.490	Btu/lb/°F	2050	J/kg/°C	
Thermal Conductivity (73°F (23°C))	1.5	Btu·in/hr/ft²/°F	0.21	W/m/K	ASTM C177

Eastar™ 6763

Eastman Chemical Company - Copolyester

Electrical	Typical Value	(English)	Typical Value	(SI)	Test Method
Surface Resistivity (73°F (23°C))	1.0E+17	ohms	1.0E+17	ohms	ASTM D257
Volume Resistivity (73°F (23°C))	1.0E+16	ohms·cm	1.0E+16	ohms·cm	ASTM D257
Dielectric Strength [8]					ASTM D149
73°F (23°C), Method A (Short-Time)	410	V/mil	16	kV/mm	
Dielectric Constant					ASTM D150
73°F (23°C), 1 kHz	2.60		2.60		
73°F (23°C), 1 MHz	2.40		2.40		
Dissipation Factor					ASTM D150
73°F (23°C), 1 kHz	5.0E-3		5.0E-3		
73°F (23°C), 1 MHz	0.020		0.020		
Arc Resistance	158	sec	158	sec	ASTM D495

Optical	Typical Value	(English)	Typical Value	(SI)	Test Method
Gloss (45°, 9.84 mil (250 µm))	108		108		ASTM D2457
Light Transmittance [9]					ASTM D1003
Regular, 9.84 mil (250 µm)	89.0	%	89.0	%	
Total, 9.84 mil (250 µm)	91.0	%	91.0	%	
Clarity (9.84 mil (250 µm))	85.0		85.0		ASTM D1746
Haze (9.84 mil (250 µm))	0.800	%	0.800	%	ASTM D1003

Processing Information

Injection	Typical Value	(English)	Typical Value	(SI)
Drying Temperature	149	°F	65	°C
Drying Time	4.0 to 6.0	hr	4.0 to 6.0	hr
Processing (Melt) Temp	480 to 520	°F	249 to 271	°C
Mold Temperature	61 to 100	°F	16 to 38	°C

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 12.7 mm dia. head, 127 mm dia. clamp, 600 mm drop

[3] 7.9 in/min (200 mm/min)

[4] Split Tear Method, 254 mm/min

[5] 4 mm

[6] 13.5 ft/sec (4.1 m/sec), 0.79 in (20 mm) Striker Diameter

[7] 40 mm support and clamp diameter

[8] 500 V/sec

[9] Modified