

# Spectar™ Copolyester 14471

Copolyester  
Eastman Chemical Company

Message:

Eastman Spectar™ copolyester (PETG) extrudes into plastic sheet that is sparkling clear, tough, chemically resistant, odor-free, versatile, easy to work with and affordable. Its toughness allows fabricators to use thinner-gauge sheet than with other common materials, resulting in lower material costs. Yet it can be extruded into sheets as thick as 12 mm (1/2 in.). It extrudes at a low temperature and will not crystallize or develop a crystalline haze. Cleaning solutions will not turn Eastman Spectar™ copolyester white. It is easy to fabricate, allowing greater design freedom. It can be laser cut, routed, welded, drilled, die-punched, bent hot or cold, or joined by screws, rivets, or bolts. It can also be cut on conventional table, band, or radial-arm saws with blades commonly used for plastic. Spectar™ copolyester can be vacuum-formed at lower temperatures than other plastics without predrying the sheet. Eastman Spectar™ copolyester can be finished easily. Its edges can be polished by using commercial edge-finishing equipment, sanding, solvents, flame-polishing or buffing. It forms clear, strong bonds with commercially available cements and solvents. It accepts screen-printing, painting, and hot-stamping easily. Surface scratches or scuff marks can be removed using a common heat gun.

Sheet made from Eastman Spectar™ copolyester (PETG) is available from plastic sheet distributors throughout North America, Canada, Europe, Asia, and Latin America.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

GREENGUARD Certification recognizes Eastman for manufacturing products with low chemical and particle emissions for better indoor environments. For more information about GEI and to obtain printable certificates for Eastman™ Copolyesters, visit [www.greenguard.org](http://www.greenguard.org). Choose Eastman Chemical Company under the Manufacturer category and click search to display a list of our products.

This product is certified to NSF/ANSI Standard 51 for Food Equipment Materials.

This product has been CRADLE TO CRADLE CERTIFIED Silver.

The CRADLE TO CRADLE CERTIFIED 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](http://www.mbdc.com). Choose Eastman Chemical Company under Company Name in C2C Certified products to display a list of our products.

General Information			
UL YellowCard	E118289-101981967	E118289-101981968	
Features	Excellent Printability		
	Good Chemical Resistance		
	Good Crack Resistance		
	Good Impact Resistance		
	Good Toughness		
	High Clarity		
	Low to No Odor		
	Uses	Decorative Displays	
Sheet			
Agency Ratings	NSF 51		
Appearance	Clear/Transparent		
Forms	Pellets		
Processing Method	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Density			

23°C	1.27	g/cm <sup>3</sup>	ISO 1183
--	1.27	g/cm <sup>3</sup>	ASTM D1505
Water Absorption (23°C, 24 hr)	0.20	%	ASTM D570, ISO 62
Color - b <sup>1</sup>	< 1.0		ASTM E308
Flammability			
France	M2		
Germany	B1		
Great Britain	1Y		
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale, 23°C)	115		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2200	MPa	ASTM D638, ISO 527-2
Tensile Strength			ASTM D638, ISO 527-2
Yield, 23°C	53.0	MPa	
Break, 23°C	26.0	MPa	
Tensile Elongation			
Yield, 23°C	4.8	%	ASTM D638
Yield, 23°C	4.7	%	ISO 527-2
Break, 23°C	50	%	ASTM D638
Break, 23°C	40	%	ISO 527-2
Flexural Modulus (23°C)	2100	MPa	ASTM D790, ISO 178
Flexural Strength			
23°C	77.0	MPa	ASTM D790
23°C	69.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179
-30°C	3.3	kJ/m <sup>2</sup>	
0°C	4.2	kJ/m <sup>2</sup>	
23°C	10	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength			ISO 179
-30°C	No Break		
0°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	39	J/m	ASTM D256
0°C	66	J/m	ASTM D256
23°C	88	J/m	ASTM D256
-30°C	4.4	kJ/m <sup>2</sup>	ISO 180
0°C	6.1	kJ/m <sup>2</sup>	ISO 180
23°C	12	kJ/m <sup>2</sup>	ISO 180
Unnotched Izod Impact			ASTM D4812
-30°C	No Break		

0°C	No Break		
23°C	No Break		
Instrumented Dart Impact			
-30°C, Energy at Peak Load	47.0	J	ASTM D3763
-20°C, Energy at Peak Load	43.0	J	ASTM D3763
-10°C, Energy at Peak Load	42.0	J	ASTM D3763
0°C, Energy at Peak Load	40.0	J	ASTM D3763
23°C, Energy at Peak Load	33.0	J	ASTM D3763
-30°C	74.0	J	ISO 6603-2
-20°C	73.0	J	ISO 6603-2
-10°C	70.0	J	ISO 6603-2
0°C	61.0	J	ISO 6603-2
23°C	59.0	J	ISO 6603-2
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	74.0	°C	ASTM D648
0.45 MPa, Unannealed	72.0	°C	ISO 75-2/B
1.8 MPa, Unannealed	70.0	°C	ASTM D648
1.8 MPa, Unannealed	68.0	°C	ISO 75-2/A
Vicat Softening Temperature			
--	83.0	°C	ASTM D1525, ISO 306/A
--	78.0	°C	ISO 306/B
CLTE - Flow (-30 to 23°C)	5.0E-5	cm/cm/°C	ASTM D696
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength <sup>2</sup> (23°C)	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 1 kHz	2.60		
23°C, 1 MHz	2.40		
Dissipation Factor			ASTM D150
23°C, 1 kHz	5.0E-3		
23°C, 1 MHz	0.020		
Arc Resistance	158	sec	ASTM D495
Flammability	Nominal Value	Unit	Test Method
Flame Rating	V-2		UL 94
Oxygen Index	26	%	ASTM D2863
Optical	Nominal Value	Unit	Test Method
Gloss (60°)	159		ASTM D2457
Refractive Index	1.570		ASTM D542
Transmittance			ASTM D1003
Total	91.0	%	
Regular	89.0	%	
Haze	< 1.0	%	ASTM D1003

Yellowness Index <sup>3</sup>	< 1.5	YI	ASTM D1925
NOTE			
1.	CIELAB, Illuminant D6500, 10° Observer		
2.	500 V/sec, Method A (Short-Time)		
3.	CIELAB, Illuminant D6500, 10° Observer		

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#### Recommended distributors for this material

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