

# Cadence™ GS1

Copolyester  
Eastman Chemical Company

Message:

Eastman Cadence™ GS1 is Eastman's original copolyester for film calendering. Calendered films made of Eastman Cadence™ copolyesters are non-crystallizing, are halogen-free, offer wide calendering and thermoforming windows and have good low-temperature toughness. They are cooperative in secondary operations such as solvent-bonding, lamination, decoration, cold-forming, punching/cutting and embossment. Eastman Cadence™ resins require no pre-drying or additional stabilizers. This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

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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			
Additive	Mold Release		
Features	Halogen Free		
	Low Temperature Toughness		
Uses	Bags		
	Film		
	Flooring Maintenance/Repair		
	Furniture		
	Labels		
	Laminates		
	Packaging		
	Shrink Wrap		
Forms	Pellets		
Processing Method	Calendering		
	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Density			ASTM D1505
-- <sup>1</sup>	1.27	g/cm <sup>3</sup>	
--	1.28	g/cm <sup>3</sup>	
Water Absorption (23°C, 24 hr)	0.16	%	ASTM D570

Inherent Viscosity <sup>2</sup>			Internal Method
23°C	0.71		
Pellets : 23°C	0.75		
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	170	µm	
Secant Modulus			ASTM D882
MD : 170 µm	1600	MPa	
TD : 170 µm	1600	MPa	
Tensile Strength			ASTM D882
MD : Yield, 170 µm	49.0	MPa	
TD : Yield, 170 µm	49.0	MPa	
MD : Break, 170 µm	63.0	MPa	
TD : Break, 170 µm	46.0	MPa	
Tensile Elongation			ASTM D882
MD : Yield, 170 µm	5.0	%	
TD : Yield, 170 µm	5.0	%	
MD : Break, 170 µm	420	%	
TD : Break, 170 µm	300	%	
Elmendorf Tear Strength			ASTM D1922
MD : 170 µm	730	g	
TD : 170 µm	900	g	
Oxygen Permeability (23°C, 170 µm, 50% RH)	7.0	cm <sup>3</sup> · mm/m <sup>2</sup> /atm/24 hr	ASTM D3985
Water Vapor Transmission Rate (38°C, 100% RH, 170 µm)	7.0	g/m <sup>2</sup> /24 hr	ASTM F372
Impact	Nominal Value	Unit	Test Method
Instrumented Dart Impact			ASTM D3763
-20°C, Energy at Peak Load	0.700	J	
0°C, Energy at Peak Load	1.20	J	
23°C, Energy at Peak Load	1.60	J	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	70.0	°C	
1.8 MPa, Unannealed	62.0	°C	
Glass Transition Temperature	81.0	°C	DSC
Vicat Softening Temperature	81.0	°C	ASTM D1525
CLTE - Flow (23°C)	7.7E-5	cm/cm/°C	ASTM D696
Specific Heat			DSC
23°C	1300	J/kg/°C	
100°C	1700	J/kg/°C	
150°C	1800	J/kg/°C	
200°C	2000	J/kg/°C	
250°C	2100	J/kg/°C	

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.2E+16	ohms	ASTM D257
Volume Resistivity (23°C)	3.9E+16	ohms·cm	ASTM D257
Dielectric Strength <sup>3</sup> (23°C)	15	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 1 kHz	2.88		
23°C, 1 MHz	2.68		
Dissipation Factor			ASTM D150
23°C, 1 kHz	0.022		
23°C, 1 MHz	0.021		
Arc Resistance	131	sec	ASTM D495
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	24	%	ASTM D2863
Optical	Nominal Value	Unit	Test Method
Gloss (60°, 170 μm)	107		ASTM D2457
Transmittance (Total, 170 μm)	90.0	%	ASTM D1003
Haze (170 μm)	2.7	%	ASTM D1003
NOTE			
1.	Film, 170 μm		
2.	EMN-A-AC-G-V-1		
3.	500 V/sec, Method A (Short-Time)		

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