

Lexan^{*} 8A13F Film

Product Datasheet

DESCRIPTION

Lexan[®] 8A13F Film is a one side matte, one side polished transparent polycarbonate film and is specifically designed to help eliminate pinholes in demanding backlit applications. The next generation of our proven polish/matte polycarbonate film, Lexan 8A13F films offer the same excellent clarity, heat resistance, and dimensional stability with an even a smoother surface. The matte texture offers mar resistance, and can be used over light-emitting devices (LEDs). It's low gloss level reduces glare in automobile interiors and office environments. Recent technology improvements now in effect reduce texture variation by 50% and allow improved gauge control (see below).

Typical Property Values¹

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Mechanical						
Tensile Strength						
@ Yield	ASTM D882	psi	8500	ISO 527	MPa	62
Ultimate	ASTM D882	psi	9000	ISO 527	MPa	65
Tensile Modulus	ASTM D882	psi	300000	ISO 527	MPa	2506
Tensile Elongation at Break	ASTM D882	%	100-157	ISO 527	%	100-154
Gardner Impact Strength at 0.03 in. (0.75 mm)	ASTM D3029	ft-lb	23	ISO 6603-1	J	31
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8		kN/m	245
Propagation	ASTM D1922	g/mil	30-55		kN/m	10-20
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010 inch (0.25 mm)	ASTM D2176-69	double folds	130			
0.020 inch (0.50 mm)	ASTM D2176-69	double folds	35			
Thermal						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft ² /°F/in	1.35		W/m ² K	0.2
Coefficient of Thermal Expansion	ASTM E831	(x 10 ⁻⁵ /°F)	3.2	ISO 11359	(x 10 ⁻⁵ /°C)	5.8
Specific Heat @ 40 °F (4 °C)	ASTM E1269	Btu/lb/°F	0.3		KJ/Kg-°C	1.25
Glass Transition Temperature	ASTM D3417/D3418	°F	307	ISO 11357	°C	153
Vicat Softening Temperature, B	ASTM 1525-00 Modified	°F	323		°C	160
Heat Deflection Temp. by TMA at 1.8 MPa		°F	290	ISO 75 Modified	°C	145
Shrinkage at 302 °F (150 °C)	ASTM D1204	%	1.40%		%	1.40%
Brittleness Temperature	ASTM D746	°F	-211		°C	-135

Manufacturing Specifications

Nominal Gauge Ranges	Min./Max Limit of Nominal
0.008" (0.200 mm)	± 10%
0.010-0.015" (0.250-0.375 mm)	± 5%
0.020" (0.500 mm)	± 3%



1 These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local GE Advanced Materials, Specialty Film & Sheet representative or the GE Advanced Materials, Specialty Film & Sheet Quality Services Department. Reported values are based on 0.010" (0.250 mm) thickness unless otherwise noted.
* Lexan is a trademark of General Electric Company.

GE Advanced Materials Specialty Film & Sheet

Property	ASTM Test Method	Units	Value	ISO Test Method	Units	Value
Physical						
Density	ASTM D792	slug/ft ³	2.3	ISO 1183	kg/m ³	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.35	ISO 62	% change	0.35
Surface Roughness (RMS)	ASME B46-1	-	55			
Surface Energy (1st surface / 2nd surface)	ASTM D5946-01	-	34/36			
Surface Tension (1st surface / 2nd surface)	Dyne Pens	Dyne	>44 / 38-40			
Optical						
Refractive Index @ 77 °F (25 °C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	87			
Yellowness Index	ASTM D1925	%	1.4			
Haze	ASTM D1003	%	90			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	14	ISO 2813	-	14

Gloss by Gauge: (ASTMD 523-85)

	Gauge	Angle		Matte
		Minimum	Maximum	
8A13F	0.008" (0.200 mm)	85°	Minimum Maximum	3 9
	0.010" (0.250 mm)	85°	Minimum Maximum	5 11
	0.015" (0.375 mm)	85°	Minimum Maximum	6 15
	0.020" (0.500 mm)	85°	Minimum Maximum	9 15

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