

Lexan[®] 8010 Film

Product Datasheet

DESCRIPTION

Lexan[®] 8010 Film polycarbonate film offers excellent clarity in all thicknesses, high heat resistance, and superior dimensional stability for graphic art applications. Derived from one of the world's toughest polymers, Lexan 8010 Film also provides a high gloss surface finish while meeting additional requirements for added UV stability. Additional enhancements allow improved gauge control (see reverse for details).

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	%	100-150	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
Propogation	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			130
0.020 inch (0.50 mm)	ASTM D2176-69	double folds	35			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
0.007" (0.175 mm)	± 10%
0.010-0.015" (0.250-0.375 mm)	± 5%
0.020-0.030" (0.500-0.750 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	-	NA			
Surface Energy	ASTM D5946-01	-	34			
Surface Tension	Dyne Pens	Dyne	38-40			
Pencil Hardness	ASTM D3363	-	b-hb			
Taber Abrasion	ASTM D1044	delta Haze	28			
Bayer Abrasion	Colts Labs test	Ratio	0.38			
Steel Wool Abrasion	Colts Labs test	Haze Gain	15.44			
Steel Wool Abrasion	Colts Labs test	Ratio	0.08			
Optical						
Refractive Index @ 77 °F (25 °C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	91			
Yellowness Index	ASTM D1925	%	0.7			
Haze	ASTM D1003	%	0.4			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	170	ISO 2813	-	170
UV %Transmission at 380 nm	UV/Visual Spectroscopy	%	29			
Electrical						
Dielectric Strength in oil, short time @ 72 °F (23 °C), 10 mils (0.25 mm)	ASTM D149-97a Method A	kV/mil	1.81	IEC 60243	kV/mm	71
Dielectric Constant @ 60 Hz	ASTM D150	-	2.32	IEC 60250	-	2.32
@ 1,000,000 Hz	ASTM D150	-	2.3	IEC 60250	-	2.3
Dissipation Factor @ 60 Hz	ASTM D150	-	0.001	IEC 60250	-	0.001
@ 1,000,000 Hz	ASTM D150	-	0.006	IEC 60250	-	0.006
Volume Resistivity	ASTM D257	Ω-cm	8.65E+16	IEC 60093	Ω-cm	8.65E+16
Surface Resistivity	ASTM D257	Ω/square	5.24E+15	IEC 60093	Ω/square	5.24E+15
Arc Resistance, Tungsten Electrodes	ASTM D495	s	70			

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