

# LEXAN™ 8010Q FILM

## PRODUCT DATASHEET

### DESCRIPTION

LEXAN™ 8010Q polycarbonate film is a transparent optical with polished finished at both sides, offers excellent clarity and optical quality in all thickness, high heat resistance, and superior dimension stability for graphics art applications. Derived from one of the world's toughest polymers, LEXAN 8010Q film also provides a high gloss surface finish while meeting additional requirement for gauge control and flatness.

### TYPICAL PROPERTY VALUES

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
<b>MECHANICAL</b>						
Tensile Strength @ Yield	ASTM D882	psi	8300	ISO 527	MPa	57
Ultimate	ASTM D882	psi	9300	ISO 527	MPa	64
Tensile Modulus	ASTM D882	psi	340000	ISO 527	MPa	2340
Tensile Elongation at Break	ASTM D882	%	80-130	ISO 527	%	80-130
Gardner Impact Strength at 0.03" (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	518		J	27.6
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	130			130
0.020" (0.50 mm)	ASTM D2176-69	double folds	35			35
<b>THERMAL</b>						
Coefficient of Thermal Conductivity at 0.02" (0.5mm)	ASTM D5470	Btu/hr/ft <sup>2</sup> /°F/in	1.35		W/m °K	0.20
Coefficient of Thermal Expansion						
CTE -20~100 °C, cross-flow	ASTM E831	(x10 <sup>-5</sup> /°F)	4.4	ISO 11359	(x10 <sup>-5</sup> /°C)	7.9
CTE -20~100 °C, inflow	ASTM E831	(x10 <sup>-5</sup> /°F)	3.9	ISO 11359	(x10 <sup>-5</sup> /°C)	7.1
Glass Transition Temperature	ASTM D3417 / D3418	°F	302	ISO 11357	°C	150
Heat Deflection Temp. by TMA at 1.8 MPa		°F	290	ISO 75 Modified	°C	143
<b>PHYSICAL</b>						
Density	ASTM D792	slug/ft <sup>3</sup>	2.3	ISO 1183	kg/m <sup>3</sup>	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.13	ISO 62	% change	0.13
Surface Roughness (RMS)	ASME B46-1	µm	0.01			
Surface Tension	Dyne Pens	Dyne	38-40			
Pencil Hardness (500g loading)	ASTM D3363	-	B			
Taber Abrasion (500g, 100cycles)	ASTM D1044	delta Haze	30			

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
<b>OPTICAL</b>						
Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	91			
Yellowness Index	ASTM D1925	%	<1.0			
Haze	ASTM D1003	%	0.1			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	104	ISO 2813	-	104
<b>ELECTRICAL</b>						
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 @ 1.1 GHz	ASTM D150	-	2.79	IEC 60250	-	2.79
Dissipation Factor @ 1.1 GHz	ASTM D150	-	0.007	IEC 60250	-	0.007
Volume Resistivity	ASTM D257	Ω-cm	1.13E+16	IEC 60093	Ω-cm	1.13E+16
Surface Resistivity	ASTM D257	Ω/square	9.8E+15	IEC 60093	Ω/square	9.8E+15
Arc Resistance, Tungsten Electrodes	ASTM D495	s	70			

◆ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local SABIC representative or the SABIC Quality Services Department. Reported values are based on 0.500 mm (0.020") thickness film and are tested at machine direction unless otherwise noted.

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## MANUFACTURING SPECIFICATIONS

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
0.004"-0.007" (0.100-0.178mm)	± 10%
0.010-0.015" (0.254-0.381 mm)	± 5%
0.020-0.030" (0.502-0.762mm)	± 3%

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