POLYVANTIS

PRODUCT DATASHEET

LEXAN™ 8B45x FILM

DESCRIPTION

LEXAN™ 8B45x polycarbonate film complies with FDA/NSF regulations and meets USP-VI criteria. It offers high heat and ultra-low temperature resistance, radiation stability, clarity, thermoformability and autoclave stability to meet sterile medical packaging requirements. Application includes packaging material that can survive low temperatures of -70°C for up to 6 months and maintain mechanical integrity. These materials are easily processed with typical forming and die-cutting equipment.

TYPICAL PROPERTY VALUES*

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	%	100-154	ISO 527	%	100-154
Gardner Impact Strength at 0.03"	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" (0.25 mm)	ASTM D2176-	double folds	60			
0.020" (0.50 mm)	ASTM D2176-	double folds	20			
THERMAL						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft^2/°F/in	1.35		W/m°K	0.2
Coefficient of Thermal Expansion	ASTM E831	(x10^{-5}/°F)	3.2	ISO 11359	(x10^{-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	312		°C	155
Heat Deflection Temp. by TMA at 1.8		°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
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	microns	See chart			
Surface Energy (1st/2nd surface)	Dyne Pens	Dyne	37/31			

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
Surface Tension (1st/2nd surface)	ASTM D3363	-	>44/38-40			
Pencil Hardness	ASTM D3363	-	B-HB			
OPTICAL						
Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	80			
Yellowness Index	ASTM D1925	%	0.35-0.70			
Haze	ASTM D1003	%	102			
Gloss over Flat Black @ 60°	ASTM D523-	-	See Chart			

GLOSS 60° (ASTM 523-60)

NOMINAL GAUGE	Velvet/Matte	
0.003" (0.075 mm)	Minimum	3/5
	Maximum	8/15
0.005-0.020" (0.125-0.500 mm)	Minimum	3/5
	Maximum	4.5/15

SURFACE ROUGHNESS (RMS)

NOMINAL GAUGE	Matte	
0.003" (0.075 mm)	Minimum	45 microns
	Maximum	165 microns
0.005-0.020" (0.125-0.500 mm)	Minimum	10 microns
	Maximum	55 microns

- These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local POLYVANTIS representative or the POLYVANTIS Quality Services Department. Reported values are based on 0.250 mm (0.010") thickness film unless otherwise noted.

STERILIZATION PERFORMANCE

TECHNIQUE	CONDITIONS
Autoclave	265°F (129°C) Single Cycle
Gamma Radiation	5 Mrads Exposure
E-Beam Radiation	3.3 Mrads at 175 kV
Ethylene Oxide	All Common Concentrations

MANUFACTURING SPECIFICATIONS

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
0.003" (0.075 mm)	± 10%
0.005-0.007" (0.125-0.175 mm)	± 8%
.010-0.015" (.0.250-0.375mm)	± 5%
0.020 " (0.500 mm)	± 3%

POLYVANTIS

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LEXAN™ POLYCARBONATE FILM & SHEET Tough, Virtually Unbreakable

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