LEXAN™ Copolymer EXL8414

REGION AMERICAS

DESCRIPTION

LEXAN EXL8414 is a PC/siloxane copolymer resin with medium flow, excellent low temperature impact and up to 25% post consumer recycle content. Availability of resin is restricted and lead times are longer due to limited manufacturing capability. Higher color variability and contamination risks including black specs needs to be considered before approval for use in applications. Contact your technical sales representative with questions.

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	57	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	60	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	113	%	ASTM D638
Tensile Modulus, 50 mm/min	2150	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	91	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2210	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	57	MPa	ISO 527
Tensile Stress, break, 50 mm/min	58	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	105	%	ISO 527
Tensile Modulus, 1 mm/min	2360	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	2170	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	852	J/m	ASTM D256
Izod Impact, notched, -30°C	741	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	71	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	67	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	56	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	82	kJ/m²	ISO 179/1eA
THERMAL [1]			
Vicat Softening Temp, Rate B/50	143	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	126	°C	ASTM D648
CTE, -40°C to 40°C, flow	6.44E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.51E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	7.22E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.55E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	143	°C	ISO 306
Vicat Softening Temp, Rate B/120	145	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	138	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	126	°C	ISO 75/Ae

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Elec [2]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	80	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.18	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [3]	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [3]	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	9.2	g/10 min	ASTM D1238
Density	1.19	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.35	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	8	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-100150790	-	-
UL Recognized, 94HB Flame Class Rating	≥0.75	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 0.75 mm	850	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	825	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75 mm	825	°C	IEC 60695-2-12
INJECTION MOLDING [4]			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	48	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	270 – 295	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.,The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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