

LEXAN* BFL4000U Resin

General Information

Product Description

Lexan* BFL4000U Polycarbonate resin is an injection moldable grade. It contains non-brominated, non-chlorinated flame retardant systems with UL-94 V0 rating and good impact/flow balance. Designed for high light reflectance and light shielding applications with good UV weathering capability.

General

Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Flame Retardant		
Features	• Bromine Free • Chlorine Free • Flame Retardant	• Good Flow • Good Impact Resistance • Good UV Resistance	• Good Weather Resistance
Uses	• Lighting Diffusers		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.38	g/cm ³	ASTM D792
Density	1.38	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	24	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	22.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption (Saturation, 23°C)	0.35	%	ISO 62
Water Absorption (Equilibrium, 23°C, 50% RH)	0.15	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ²	2240	MPa	ASTM D638
Tensile Modulus	2040	MPa	ISO 527-2/1
Tensile Strength ³ (Yield)	54.0	MPa	ASTM D638
Tensile Stress (Yield)	50.0	MPa	ISO 527-2/5
Tensile Strength ³ (Break)	47.0	MPa	ASTM D638
Tensile Stress (Break)	44.0	MPa	ISO 527-2/5
Tensile Elongation ³ (Yield)	5.0	%	ASTM D638
Tensile Strain (Yield)	6.0	%	ISO 527-2/5
Tensile Elongation ³ (Break)	56	%	ASTM D638
Tensile Strain (Break)	74	%	ISO 527-2/5
Flexural Modulus ⁴ (50.0 mm Span)	2050	MPa	ASTM D790
Flexural Modulus ⁵	2170	MPa	ISO 178
Flexural Strength ^{5, 6}	83.0	MPa	ISO 178
Flexural Strength ⁴ (Yield, 50.0 mm Span)	90.0	MPa	ASTM D790

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷ (23°C)	30	kJ/m²	ISO 179/1eA
Notched Izod Impact			ASTM D256
-30°C	240	J/m	
23°C	470	J/m	
Notched Izod Impact Strength ⁸			ISO 180/1A
-30°C	20	kJ/m²	
23°C	30	kJ/m²	
Instrumented Dart Impact (23°C, Total Energy)	68.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed, 3.20 mm	131	°C	
0.45 MPa, Unannealed, 6.40 mm	134	°C	
Heat Deflection Temperature ⁹			ISO 75-2/Bf
0.45 MPa, Unannealed, 64.0 mm Span	130	°C	
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed, 6.40 mm	124	°C	
Heat Deflection Temperature ⁹			ISO 75-2/Af
1.8 MPa, Unannealed, 64.0 mm Span	115	°C	
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Annealed, 3.20 mm	115	°C	
Vicat Softening Temperature	136	°C	ASTM D1525 ¹⁰
Vicat Softening Temperature			
--	137	°C	ISO 306/B50
--	139	°C	ISO 306/B120
CLTE - Flow (-40 to 40°C)	0.000075	cm/cm/°C	ASTM E831
CLTE - Flow (-40 to 40°C)	0.000075	cm/cm/°C	ISO 11359-2
CLTE - Transverse (-40 to 40°C)	0.000075	cm/cm/°C	ASTM E831
CLTE - Transverse (-40 to 40°C)	0.000075	cm/cm/°C	ISO 11359-2
Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL (1.50 mm)	V-0		UL 94

Processing Information			
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	249 to 271	°C	
Middle Temperature	260 to 282	°C	
Front Temperature	271 to 293	°C	
Nozzle Temperature	266 to 288	°C	

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Injection	Nominal Value	Unit
Processing (Melt) Temp	271 to 293	°C
Mold Temperature	71.1 to 93.3	°C
Back Pressure	0.345 to 0.689	MPa
Screw Speed	40 to 70	rpm
Vent Depth	0.025 to 0.076	mm

Notes

¹ Typical properties: these are not to be construed as specifications.
² 5.0 mm/min
³ Type I, 5.0 mm/min
⁴ 1.3 mm/min
⁵ 2.0 mm/min
⁶ Yield
⁷ 80*10*4 sp=62mm
⁸ 80*10*4
⁹ 80*10*4 mm
¹⁰ Rate B (120°C/h), Loading 2 (50 N)