

LEXAN* 101 Resin

General Information

Product Description

UL rated HB as of 10/97. 200 series recommended when V-2 rating required. Nonhalogenated, 7.0 MFR, for thicker sections without sinks.

General

Material Status	• Commercial: Active
Availability	• North America
Features	• Halogen Free
Processing Method	• Injection Molding
Multi-Point Data	• Coefficient of Thermal Expansion vs. Temperature (ASTM E831) • Elastic Modulus vs Temperature (ASTM D4065) • Flexural DMA (ASTM D4065) • Instrumented Impact (Energy) (ASTM D3763) • Instrumented Impact (Load) (ASTM D3763) • Specific Heat vs. Temperature (ASTM D3417) • Tensile Creep (ASTM D2990) • Tensile Fatigue • Tensile Stress vs. Strain (ASTM D638) • Thermal Conductivity vs. Temperature (ASTM E1530) • Viscosity vs. Shear Rate (ASTM D3835)

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm ³	ASTM D792
Specific Volume	0.835	cm ³ /g	ASTM D792
Density	1.19	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	7.0	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption (24 hr)	0.15	%	ASTM D570
Water Absorption			ASTM D570
Equilibrium, 23°C	0.35	%	
Equilibrium, 100°C	0.58	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ² (Yield)	62.1	MPa	ASTM D638
Tensile Strength ² (Break)	68.9	MPa	ASTM D638
Tensile Elongation ² (Yield)	7.0	%	ASTM D638
Tensile Elongation ² (Break)	140	%	ASTM D638
Flexural Modulus ³ (50.0 mm Span)	2340	MPa	ASTM D790
Flexural Strength ³ (Yield, 50.0 mm Span)	97.9	MPa	ASTM D790
Taber Abrasion Resistance			ASTM D1044
1000 Cycles, 1000 g, CS-17 Wheel	10.0	mg	

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Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	910	J/m	ASTM D256
Unnotched Izod Impact (23°C)	3200	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Energy at Peak Load)	65.0	J	ASTM D3763
Gardner Impact (23°C)	169	J	ASTM D3029
Tensile Impact Strength ⁴	630	kJ/m²	ASTM D1822
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	70		
R-Scale	118		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed, 6.40 mm	138	°C	
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed, 6.40 mm	132	°C	
Vicat Softening Temperature	154	°C	ASTM D1525 ⁵
CLTE - Flow (-40 to 95°C)	0.000068	cm/cm/°C	ASTM E831
Specific Heat	1260	J/kg/°C	ASTM C351
Thermal Conductivity	0.29	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.0E+17	ohm-cm	ASTM D257
Dielectric Strength (3.20 mm, in Air)	15	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
50 Hz	3.17		
60 Hz	3.17		
1 MHz	2.96		
Dissipation Factor			ASTM D150
50 Hz	0.00090		
60 Hz	0.00090		
1 MHz	0.010		
Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL (0.711 mm)	HB		UL 94
Radiant Panel Listing (UL)	YES		
UL	Nominal Value	Unit	Test Method
RTI Str	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Elec	130	°C	UL 746
Comparative Tracking Index (CTI) (PLC)	PLC 2		UL 746
High Voltage Arc Tracking Rate (HVTR) (PLC)	PLC 2		UL 746
Hot-wire Ignition (HWI) (PLC)	PLC 2		UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 1		UL 746
Outdoor Suitability	f2		UL 746C

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Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542
Transmittance (2540 μm)	88.0	%	ASTM D1003
Haze (2540 μm)	1.0	%	ASTM D1003

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	288 to 310	°C	
Middle Temperature	299 to 321	°C	
Front Temperature	310 to 332	°C	
Nozzle Temperature	304 to 327	°C	
Processing (Melt) Temp	310 to 332	°C	
Mold Temperature	82.2 to 116	°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 Type I, 50 mm/min

³ 1.3 mm/min

⁴ Type S

⁵ Rate B (120°C/h), Loading 2 (50 N)