

LEXAN* 500R Resin

General Information

Product Description

10% GR PC. Optimum combination of high modulus plus excellent impact strength and flame retardance. Internal mold release.

General

Material Status	• Commercial: Active
Availability	• North America
Filler / Reinforcement	• Glass Fiber Reinforcement, 10% Filler by Weight
Additive	• Mold Release
Features	• Flame Retardant • Good Impact Resistance • High Stiffness
Processing Method	• Injection Molding
Multi-Point Data	• Coefficient of Thermal Expansion vs. Temperature (ASTM E831) • Flexural DMA (ASTM D4065) • Pressure-Volume-Temperature (PVT - Zoller Method) • Shear DMA (ASTM D4065) • Specific Heat vs. Temperature (ASTM D3417) • 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	1.27	g/cm ³	ASTM D792
Specific Volume	0.802	cm ³ /g	ASTM D792
Density	1.25	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	7.5	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.20 to 0.40	%	Internal Method
Water Absorption (24 hr)	0.12	%	ASTM D570
Water Absorption (Equilibrium, 23°C)	0.31	%	ASTM D570
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ² (Yield)	66.2	MPa	ASTM D638
Tensile Strength ² (Break)	55.2	MPa	ASTM D638
Tensile Elongation ² (Yield)	8.0	%	ASTM D638
Tensile Elongation ² (Break)	15	%	ASTM D638
Flexural Modulus ³ (50.0 mm Span)	3450	MPa	ASTM D790
Flexural Strength ³ (Yield, 50.0 mm Span)	103	MPa	ASTM D790
Taber Abrasion Resistance			ASTM D1044
1000 Cycles, 1000 g, CS-17 Wheel	11.0	mg	

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Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	110	J/m	ASTM D256
Unnotched Izod Impact (23°C)	2100	J/m	ASTM D4812
Gardner Impact (23°C)	102	J	ASTM D3029
Tensile Impact Strength ⁴	158	kJ/m²	ASTM D1822
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	85		
R-Scale	124		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed, 6.40 mm	146	°C	
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed, 6.40 mm	142	°C	
Vicat Softening Temperature	154	°C	ASTM D1525 ⁵
CLTE - Flow (-40 to 95°C)	0.000032	cm/cm/°C	ASTM E831
Specific Heat	1210	J/kg/°C	ASTM C351
Thermal Conductivity	0.20	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)	18	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
50 Hz	3.10		
60 Hz	3.10		
1 MHz	3.05		
Dissipation Factor			ASTM D150
50 Hz	0.00080		
60 Hz	0.00080		
1 MHz	0.0075		
Arc Resistance (PLC) ⁶	PLC 7		ASTM D495
Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL			UL 94
1.52 mm	V-0		
3.05 mm	5VA		
Oxygen Index	36	%	ASTM D2863
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 3		UL 746
High Voltage Arc Tracking Rate (HVTR) (PLC)	PLC 4		UL 746
Hot-wire Ignition (HWI) (PLC)	PLC 1		UL 746

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UL	Nominal Value	Unit	Test Method
High Amp Arc Ignition (HAI) (PLC)	PLC 4		UL 746
Outdoor Suitability	f2		UL 746C

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, 5.0 mm/min
³ 1.3 mm/min
⁴ Type S
⁵ Rate B (120°C/h), Loading 2 (50 N)
⁶ Tungsten Electrode