

LEXAN™ 505R resin

Polycarbonate

SABIC Innovative Plastics

Message:

LEXAN 505R Polycarbonate (PC) resin is a 10% glass fiber filled, injection moldable grade. LEXAN 505R contains non-chlorinated, non-brominated flame retardant systems with UL-94 V0 rating at 1.5mm. It is available in various opaque color options for high stiffness applications.

General Information			
UL YellowCard	E121562-257602		
Filler / Reinforcement	Glass Fiber,10% Filler by Weight		
Additive	Flame Retardant		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
	High Stiffness		
Appearance	Colors Available		
	Opaque		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.26	g/cm ³	ASTM D792
--	1.25	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	7.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow			Internal Method
-- ¹	0.20 to 0.60	%	
3.20 mm	0.50 to 0.70	%	
Water Absorption			ISO 62
Saturation, 23°C	0.31	%	
Equilibrium, 23°C, 50% RH	0.13	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	115	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	3930	MPa	ASTM D638
--	3300	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	63.0	MPa	ASTM D638

Yield	60.0	MPa	ISO 527-2/5
Break ⁴	48.0	MPa	ASTM D638
Break	45.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁵	3.0	%	ASTM D638
Yield	5.0	%	ISO 527-2/5
Break ⁶	12	%	ASTM D638
Break	7.0	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span ⁷	3530	MPa	ASTM D790
-- ⁸	3400	MPa	ISO 178
Flexural Stress			
--	95.0	MPa	ISO 178
Break, 50.0 mm Span ⁹	108	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	11.0	mg	Internal Method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C ¹⁰	9.0	kJ/m ²	ISO 179/1eA
23°C ¹¹	9.0	kJ/m ²	ISO 179/1eA
23°C ¹²	10	kJ/m ²	ISO 179/1eA
23°C	15	kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength ¹³			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	80	J/m	ASTM D256
23°C	110	J/m	ASTM D256
-30°C ¹⁴	8.0	kJ/m ²	ISO 180/1A
23°C ¹⁵	10	kJ/m ²	ISO 180/1A
23°C ¹⁶	8.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	1600	J/m	ASTM D4812
-30°C ¹⁷	No Break		ISO 180/1U
-30°C ¹⁸	130	kJ/m ²	ISO 180/1U
23°C ¹⁹	No Break		ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	61.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	143	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ²⁰	144	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	138	°C	ASTM D648

1.8 MPa, Unannealed, 100 mm Span ²¹	136	°C	ISO 75-2/Ae
1.8 MPa, Annealed ²²	136	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	149	°C	ASTM D1525 ²³
--	141	°C	ISO 306/B50
--	143	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -40 to 40°C	4.7E-5	cm/cm/°C	ASTM E831
Flow : 23 to 80°C	4.0E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	8.5E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.21	W/m/K	ISO 8302
RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Str	130	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Electric Strength			IEC 60243-1
0.800 mm, in Oil	33	kV/mm	
1.60 mm, in Oil	25	kV/mm	
3.20 mm, in Oil	16	kV/mm	
Relative Permittivity			IEC 60250
50 Hz	2.90		
60 Hz	2.90		
1 MHz	2.80		
Dissipation Factor			IEC 60250
50 Hz	1.0E-3		
60 Hz	1.0E-3		
1 MHz	0.010		
Comparative Tracking Index	150	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.00 mm)	825	°C	IEC 60695-2-13
Oxygen Index	37	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	120	°C	
Drying Time	2.0 to 4.0	hr	

Suggested Max Moisture	0.020	%
Hopper Temperature	60.0 to 80.0	°C
Rear Temperature	270 to 300	°C
Middle Temperature	280 to 310	°C
Front Temperature	290 to 320	°C
Nozzle Temperature	280 to 310	°C
Processing (Melt) Temp	290 to 320	°C
Mold Temperature	80.0 to 120	°C

NOTE		
1.	Tensile Bar	
2.	5.0 mm/min	
3.	Type I, 5.0 mm/min	
4.	Type I, 5.0 mm/min	
5.	Type I, 5.0 mm/min	
6.	Type I, 5.0 mm/min	
7.	1.3 mm/min	
8.	2.0 mm/min	
9.	1.3 mm/min	
10.	80*10*3 sp=62mm	
11.	80*10*4 sp=62mm	
12.	80*10*3 sp=62mm	
13.	80*10*4 sp=62mm	
14.	80*10*4	
15.	80*10*3	
16.	80*10*4	
17.	80*10*4	
18.	80*10*3	
19.	80*10*3	
20.	120*10*4 mm	
21.	120*10*4 mm	
22.	2 hr, 120°C	
23.	Rate B (120°C/h), Loading 2 (50 N)	

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