

LEXAN™ Resin 505R Americas: COMMERCIAL

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.

YPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard	
MECHANICAL				
Tensile Stress, yld, Type I, 5 mm/min	640	kgf/cm²	ASTM D 638	
Tensile Stress, brk, Type I, 5 mm/min	480	kgf/cm²	ASTM D 638	
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D 638	
Tensile Strain, brk, Type I, 5 mm/min	12	%	ASTM D 638	
Tensile Modulus, 5 mm/min	40000	kgf/cm²	ASTM D 638	
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1100	kgf/cm²	ASTM D 790	
Flexural Modulus, 1.3 mm/min, 50 mm span	35900	kgf/cm²	ASTM D 790	
Taber Abrasion, CS-17, 1 kg	11	mg/1000cy	SABIC Method	
Tensile Stress, yield, 5 mm/min	60	MPa	ISO 527	
Tensile Stress, break, 5 mm/min	45	MPa	ISO 527	
Tensile Strain, yield, 5 mm/min	5	%	ISO 527	
Tensile Strain, break, 5 mm/min	7	%	ISO 527	
Tensile Modulus, 1 mm/min	3300	MPa	ISO 527	
Flexural Stress, yield, 2 mm/min	95	MPa	ISO 178	
Flexural Modulus, 2 mm/min	3400	MPa	ISO 178	
Hardness, H358/30	115	MPa	ISO 2039-1	
IMPACT				
Izod Impact, unnotched, 23°C	163	cm-kgf/cm	ASTM D 4812	
Izod Impact, notched, 23°C	10	cm-kgf/cm	ASTM D 256	
Izod Impact, notched, -30°C	8	cm-kgf/cm	ASTM D 256	
Instrumented Impact Total Energy, 23°C	622	cm-kgf	ASTM D 3763	
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U	

Source GMD, last updated:

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(6) Needs hard coat to consistently pass 60 sec Vertical Burn.



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IMPACT			
Izod Impact, unnotched 80*10*3 -30°C	130	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	10	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	8	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	10	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	9	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
Charpy Impact, notched, 23°C	15	kJ/m²	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	149	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	143	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	138	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.68E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.46E-05	1/°C	ASTM E 831
Thermal Conductivity	0.21	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	4.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.E-05	1/°C	ISO 11359-2

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THERMAL				
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2	
Vicat Softening Temp, Rate B/50	141	°C	ISO 306	
Vicat Softening Temp, Rate B/120	143	°C	ISO 306	
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	144	°C	ISO 75/Be	
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	136	°C	ISO 75/Ae	
HDT/Ae, 1.8 MPa Annealed 120°C, 2hrs	136	°C	ISO 75/Ae	
Relative Temp Index, Elec	130	°C	UL 746B	
Relative Temp Index, Mech w/impact	130	°C	UL 746B	
Relative Temp Index, Mech w/o impact	130	°C	UL 746B	
PHYSICAL				
Specific Gravity	1.26	-	ASTM D 792	
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.2 - 0.6	%	SABIC Method	
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method	
Melt Flow Rate, 300°C/1.2 kgf	7	g/10 min	ASTM D 1238	
Density	1.25	g/cm³	ISO 1183	
Water Absorption, (23°C/sat)	0.31	%	ISO 62	
Moisture Absorption (23°C / 50% RH)	0.13	%	ISO 62	
Melt Volume Rate, MVR at 300°C/1.2 kg	7	cm ³ /10 min	ISO 1133	
ELECTRICAL				
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093	
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093	
Dielectric Strength, in oil, 0.8 mm	33	kV/mm	IEC 60243-1	
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	IEC 60243-1	
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1	
Relative Permittivity, 1 MHz	2.8	-	IEC 60250	
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250	
Dissipation Factor, 1 MHz	0.01	-	IEC 60250	
Comparative Tracking Index	150	V	IEC 60112	

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
ELECTRICAL			
Relative Permittivity, 50/60 Hz	2.9	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
Oxygen Index (LOI)	37	%	ISO 4589

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OCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	120	°C
Drying Time	2 - 4	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	290 - 320	°C
Nozzle Temperature	280 - 310	°C
Front - Zone 3 Temperature	290 - 320	°C
Middle - Zone 2 Temperature	280 - 310	°C
Rear - Zone 1 Temperature	270 - 300	°C
Hopper Temperature	60 - 80	°C
Mold Temperature	80 - 120	°C

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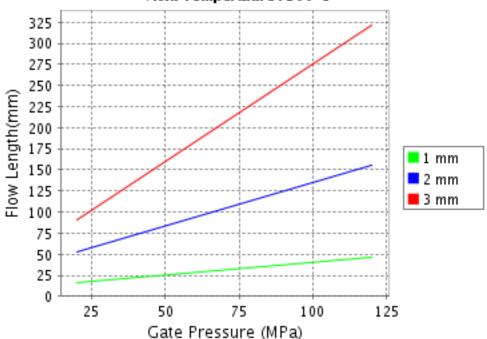
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CALCULATED FLOW LENGTH INDICATION Moldflow® Radial Flow Analysis LEXAN* 505R

Melt Temperature: 305°C Mold Temperature:100°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative. Moldflow is a registered trademark of the Moldflow

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