LEXAN™ FR RESINS 505R

REGION ASIA

DESCRIPTION

LEXAN™ 505R resin is a 10% glass fiber filled, 7 MFR polycarbonate, MVR of 7. Mold release. Non-chlorinated, non-brominated flame retardant, UL94 V0 and 5VA rated. Combination of modulus, impact strength and flame retardancy. Available in natural and opaque colors.

INDUSTRY	SUB INDUSTRY
Consumer	Sport/Leisure
Electrical and Electronics	Electrical Devices and Displays, Lighting, Electrical Components and Infrastructure
Hydrocarbon and Energy	Electric Vehicle, Energy Storage
Hygiene and Healthcare	General Healthcare, Patient Testing
Industrial	Servomotor, Electronic Material

TYPICAL PROPERTY VALUES

Revision 20220309

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	63	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	48	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	12	%	ASTM D638
Tensile Modulus, 5 mm/min	3930	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	108	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3530	MPa	ASTM D790
Hardness, Rockwell M	85	-	ASTM D785
Hardness, Rockwell R	124	-	ASTM D785
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
Ball Indentation Hardness, H358/30	115	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched, 23°C	1602	J/m	ASTM D4812
Izod Impact, notched, 23°C	107	J/m	ASTM D256
Izod Impact, notched, -30°C	80	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	61	J	ASTM D3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
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

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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			
Specific Heat	1.21	J/g-°C	ASTM C351
Thermal Conductivity	0.2	W/m-°C	ASTM C177
Vicat Softening Temp, Rate B/50	141	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	143	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	136	°C	ASTM D648
CTE, -40°C to 40°C, flow	4.68E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.46E-05	1/°C	ASTM E831
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
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/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	142	°C	ISO 75/Bf
HDT/Bf, 0.45 MPa Flatw, Annealed 120°C, 2 hrs	144	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	136	°C	ISO 75/Af
HDT/Af, 1.8 MPa Flatw, Annealed 120°C, 2 hrs	140	°C	ISO 75/Af
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 D792
Moisture Absorption, (23°C/50% RH/24 hrs)	0.13	%	ASTM D570
Water Absorption, (23°C/24hrs)	0.12	%	ASTM D570
Water Absorption, (23°C/Saturated)	0.31	%	ASTM D570
Mold Shrinkage on Tensile Bar, flow	0.2 – 0.6	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	7	g/10 min	ASTM D1238
Density	1.25	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.31	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.13	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	7	cm³/10 min	ISO 1133

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
ELECTRICAL			
Volume Resistivity	>1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	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	175	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.9	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	3	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Yellow Card Link	E207780-228398	-	-
UL Recognized, 94V-0 Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	3	mm	UL 94
UL Compliant, 94-5VB Rating	2	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	0.8	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.8 mm	825	°C	IEC 60695-2-13
Oxygen Index (LOI)	37	%	ISO 4589
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	

DISCLAIMER