

LEXANTM FR RESINS 905

REGION EUROPE

DESCRIPTION

LEXAN 905 Polycarbonate (PC) is an injection moldable non-chlorinated and non-brominated, unfilled flame retardant grade with high flow. It has an MVR of 29 (300°C/1.2kg) and a UL94 V0@1.5mm, 5VA at 2.8mm rating and is available in various opaque color options.

INDUSTRY	SUB INDUSTRY
Consumer	Commercial Appliance
Electrical and Electronics	Electrical Devices and Displays, Lighting, Electrical Components and Infrastructure
Hydrocarbon and Energy	Energy Storage

TYPICAL PROPERTY VALUES

Revision 20190418

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	56	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	51	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	102	%	ASTM D 638
Tensile Modulus, 50 mm/min	2250	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	93	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2150	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	50	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.7	%	ISO 527
Tensile Strain, break, 50 mm/min	97	%	ISO 527
Tensile Modulus, 1 mm/min	2200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	92	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	2150	J/m	ASTM D 4812
Izod Impact, unnotched, -30°C	2000	J/m	ASTM D 4812
Izod Impact, notched, 23°C	740	J/m	ASTM D 256
Izod Impact, notched, -30°C	230	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	69	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	184	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	183	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	58	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	21	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	50	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	16	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	135	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	134	kJ/m ²	ISO 179/1eU

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
THERMAL			
Vicat Softening Temp, Rate B/50	136	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	130	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	118	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.9E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.1E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	7E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	6.9e-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASS	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	137	°C	ISO 306
Vicat Softening Temp, Rate B/120	138	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	131	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	119	°C	ISO 75/Ae
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.6 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.6 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	30	g/10 min	ASTM D 1238
Density	1.19	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.26	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	29	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1E15 – 1E16	Ohm-cm	ASTM D 257
Surface Resistivity	1E15 – 1E16	Ohm	ASTM D 257
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Dielectric Constant, 1.9 GHz	2.8	-	SABIC method
Dielectric Constant, 5 GHz	2.8	-	SABIC method
Dielectric Constant, 10 GHz	2.8	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0057	-	SABIC method
Dissipation Factor, 5 GHz	0.0058	-	SABIC method
Dissipation Factor, 10 GHz	0.0052	-	SABIC method
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating	1.1	mm	UL 94 by SABIC-IP
UL Compliant, 94V-1 Flame Class Rating	0.75	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VA Rating	2.8	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VB Rating	2	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	2	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	875	°C	IEC 60695-2-13
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	48	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	270 – 295	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Nozzle Temperature	265 – 290	°C	
Front - Zone 3 Temperature	270 – 295	°C	
Middle - Zone 2 Temperature	260 – 280	°C	
Rear - Zone 1 Temperature	250 – 270	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

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