

LEXAN™ FR RESIN 3412ECR

REGION ASIA

DESCRIPTION

LEXAN 3412ECR Polycarbonate (PC) is an injection moldable non-chlorinated/brominated flame retardant grade that is 20% glass fiber filled. It has a UL94 V0@1.5mm rating and is available in various opaque color options.

TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	90	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	87	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3.1	%	ASTM D 638
Tensile Modulus, 5 mm/min	5500	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	156	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	5000	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	95	MPa	ISO 527
Tensile Stress, break, 5 mm/min	90	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.8	%	ISO 527
Tensile Strain, break, 5 mm/min	3.2	%	ISO 527
Tensile Modulus, 1 mm/min	6000	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	140	MPa	ISO 178
Flexural Modulus, 2 mm/min	5500	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	110	J/m	ASTM D 256
Izod Impact, notched, -30°C	107	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	20	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	35	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	35	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	7	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	6	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	6	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	5	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	40	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	40	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	147	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	141	°C	ASTM D 648
CTE, -40°C to 40°C, flow	3.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	3.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	145	°C	ISO 306

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120	146	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	141	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	136	°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	1.3	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.2 – 0.5	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.2 – 0.5	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	7	g/10 min	ASTM D 1238
Density	1.36	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.29	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.12	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	7	cm ³ /10 min	ISO 1133
ELECTRICAL			
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	0	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	3	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Dielectric strength in oil, 2.0mm	34	kV/mm	IEC 60243-1
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Relative Permittivity, 1 MHz	3.3	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.02	-	IEC 60250
Dissipation Factor, 1 MHz	0.01	-	IEC 60250
Relative Permittivity, 50/60 Hz	3.3	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94-5VA Rating	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)	40	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	48	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 310	°C	
Nozzle Temperature	280 – 305	°C	
Front - Zone 3 Temperature	290 – 310	°C	
Middle - Zone 2 Temperature	275 – 300	°C	
Rear - Zone 1 Temperature	265 – 290	°C	
Mold Temperature	70 – 95	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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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