

LEXAN™ CFR7431 resin

Polycarbonate

SABIC Innovative Plastics

Message:

LEXAN CFR7431 Polycarbonate (PC) resin is a non-filled, injection moldable grade. This non-chlorinated, non-brominated flame retardant PC has an UL-94 V0 rating at 1.2 mm / 5VA rating at 3.0mm and is UV stabilized(F1 rating) providing additional weathering capability. LEXAN CFR7431 is available in clear transparent and tinted color options that is an excellent candidate for a wide variety of applications.

General Information			
UL YellowCard	E121562-100922880		
Additive	UV Stabilizer		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
	Good Weather Resistance		
Appearance	Clear/Transparent		
	Colors Available		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.19	g/cm ³	ASTM D792
--	1.20	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	9.00	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal Method
Flow : 3.20 mm	0.55 to 0.75	%	
Across Flow : 3.20 mm	0.60 to 0.80	%	
Water Absorption			ISO 62
Saturation, 23°C	0.13	%	
Equilibrium, 23°C, 50% RH	0.10	%	
Outdoor Suitability	f1		UL 746C
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2520	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	67.0	MPa	ASTM D638
Yield	66.0	MPa	ISO 527-2/50

Break ³	55.0	MPa	ASTM D638
Break	53.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break ⁵	55	%	ASTM D638
Break	56	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2450	MPa	ASTM D790
-- ⁷	2450	MPa	ISO 178
Flexural Stress			
--	101	MPa	ISO 178
Yield, 50.0 mm Span ⁸	107	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	7.0	kJ/m ²	
23°C	10	kJ/m ²	
Charpy Unnotched Impact Strength ¹⁰			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	81	J/m	ASTM D256
23°C	100	J/m	ASTM D256
-30°C ¹¹	8.0	kJ/m ²	ISO 180/1A
23°C ¹²	9.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			ASTM D4812, ISO 180/1U
-30°C	No Break		
23°C	No Break		
Instrumented Dart Impact (23°C, Total Energy)	64.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	131	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ¹³	131	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	120	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁴	120	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	136	°C	ASTM D1525 ¹⁵
--	137	°C	ISO 306/B50
--	139	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			

Flow : -40 to 40°C	6.7E-5	cm/cm/°C	ASTM E831
Flow : 23 to 80°C	7.7E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	6.7E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.9E-5	cm/cm/°C	ISO 11359-2
RTI Elec	125	°C	UL 746
RTI Imp	120	°C	UL 746
RTI Str	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Dielectric Constant (1.10 GHz)	2.79		ASTM E57-83
Dissipation Factor (1.10 GHz)	5.7E-3		ASTM E57-83
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.400 mm	V-2		
1.00 mm	V-1		
1.20 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index (1.20 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.20 mm)	850	°C	IEC 60695-2-13
Optical	Nominal Value	Unit	Test Method
Transmittance			Internal Method
1000 µm	> 90.0	%	
2000 µm	> 89.0	%	
3000 µm	> 88.0	%	
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	260 to 282	°C	
Middle Temperature	271 to 293	°C	
Front Temperature	282 to 304	°C	
Nozzle Temperature	277 to 299	°C	
Processing (Melt) Temp	282 to 304	°C	
Mold Temperature	71.1 to 93.3	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	
NOTE			
1.	50 mm/min		
2.	Type I, 50 mm/min		
3.	Type I, 50 mm/min		

4.	Type I, 50 mm/min
5.	Type I, 50 mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*3 sp=62mm
10.	80*10*3 sp=62mm
11.	80*10*3
12.	80*10*3
13.	120*10*4 mm
14.	120*10*4 mm
15.	Rate B (120°C/h), Loading 2 (50 N)

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