



LEXAN™ Resin CFR7431

Asia Pacific: COMMERCIAL

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.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	680	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	560	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	55	%	ASTM D 638
Tensile Modulus, 50 mm/min	25600	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1090	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	24900	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 50 mm/min	66	MPa	ISO 527
Tensile Stress, break, 50 mm/min	53	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	56	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	101	MPa	ISO 178
Flexural Modulus, 2 mm/min	2450	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	NB	cm-kgf/cm	ASTM D 4812
Izod Impact, unnotched, -30°C	NB	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	652	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80°10'3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80°10'3 -30°C	NB	kJ/m ²	ISO 180/1U

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(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

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(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

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

Source GMD, last updated:

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IMPACT			
Izod Impact, notched 80*10*3 +23°C	9	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	8	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	10	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	7	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	136	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	131	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.7E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	7.7E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.9E-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	139	°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	120	°C	ISO 75/Ae
Relative Temp Index, Elec	125	°C	UL 746B
Relative Temp Index, Mech w/impact	120	°C	UL 746B
Relative Temp Index, Mech w/o impact	125	°C	UL 746B
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.55 - 0.75	%	SABIC Method

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 (3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
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 (5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.
 (6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
PHYSICAL			
Mold Shrinkage, xflow, 3.2 mm (5)	0.6 - 0.8	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D 1238
Density	1.2	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.13	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.1	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm ³ /10 min	ISO 1133
OPTICAL			
Light Transmission at 1.0 mm	>90	%	SABIC Method
Light Transmission at 2.0 mm	>89	%	SABIC Method
Light Transmission at 3.0 mm	>88	%	SABIC Method
ELECTRICAL			
Dielectric Constant (Dk), 1.1 GHz	2.79	-	ASTM ES 7-83
Dissipation Factor (Df), 1.1 GHz	0.0057	-	ASTM ES 7-83
FLAME CHARACTERISTICS			
UL Recognized, 94V-2 Flame Class Rating (3)	0.4	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating (3)	1	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	1.2	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1.2	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.2 mm	850	°C	IEC 60695-2-13
UV-light, water exposure/immersion	F1	-	UL 746C

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	280 - 305	°C
Nozzle Temperature	275 - 300	°C
Front - Zone 3 Temperature	280 - 305	°C
Middle - Zone 2 Temperature	270 - 295	°C
Rear - Zone 1 Temperature	260 - 280	°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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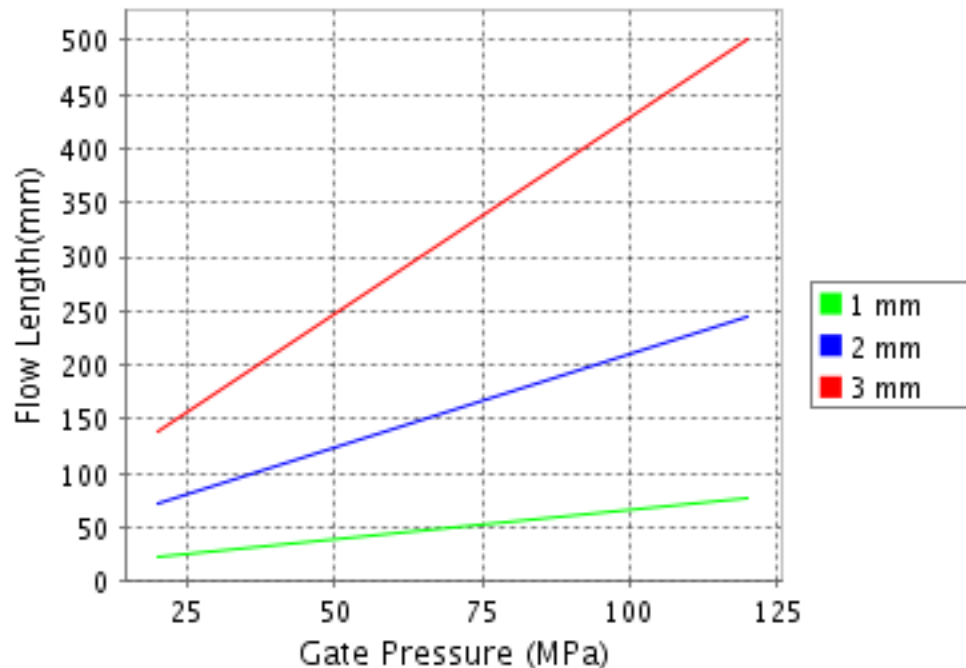
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

LEXAN® CFR7431

Melt Temperature : 295°C

Mold Temperature : 85°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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