

SABIC Innovative Plastics Lexan® CFR9712 PC COPOLYMER

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® CFR9712 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 2.0 mm and high flow capability. Lexan® CFR9712 is available in clear transparent and tinted color options that is an excellent candidate for a wide variety of applications.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-CFR9712-PC-COPOLYMER.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Moisture Absorption	0.110 %	0.110 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.14 %	0.14 %	ISO 62
Linear Mold Shrinkage, Flow	0.0055 - 0.0075 cm/cm @Thickness 3.20 mm	0.0055 - 0.0075 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0060 - 0.0080 cm/cm @Thickness 3.20 mm	0.0060 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	30 g/10 min @Load 1.20 kg, Temperature 300 °C	30 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	29 g/10 min @Load 1.20 kg, Temperature 300 °C	29 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	51.0 MPa	7400 psi	Type I, 50 mm/min; ASTM D638
	56.0 MPa	8120 psi	50 mm/min; ISO 527
Tensile Strength, Yield	63.0 MPa	9140 psi	50 mm/min; ISO 527
	66.0 MPa	9570 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	55 %	55 %	Type I, 50 mm/min; ASTM D638
	78 %	78 %	50 mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	Type I, 50 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments, ISO 527
Tensile Modulus	2.20 GPa	319 ksi	1 mm/min; ISO 527
	2.45 GPa	355 ksi	50 mm/min; ASTM D638
Flexural Yield Strength	97.0 MPa	14100 psi	2 mm/min; ISO 178
	105 MPa	15200 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.37 GPa	344 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.40 GPa	348 ksi	2 mm/min; ISO 178
Izod Impact, Notched	1.00 J/cm	1.87 ft-lb/in	ASTM D256
	0.900 J/cm @Temperature -30.0 °C	1.69 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D4812
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	ASTM D4812
Izod Impact, Notched (ISO)	10.0 kJ/m ²	4.76 ft-lb/in ²	80*10*3; ISO 180/1A
	10.0 kJ/m ² @Temperature -30.0 °C	4.76 ft-lb/in ² @Temperature -22.0 °F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*3; ISO 180/1U
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	3.00 J/cm ²	14.3 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	1.00 J/cm ² @Temperature -30.0 °C	4.76 ft-lb/in ² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	60.0 J	44.3 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	37.8 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
	78.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	43.3 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^{\circ}\text{C}$	@Temperature 73.4 - 176 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
	76.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	42.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^{\circ}\text{C}$	@Temperature 73.4 - 176 $^{\circ}\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	130 $^{\circ}\text{C}$	266 $^{\circ}\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Be
	130 $^{\circ}\text{C}$ @Thickness 3.20 mm	266 $^{\circ}\text{F}$ @Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	120 $^{\circ}\text{C}$	248 $^{\circ}\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	120 $^{\circ}\text{C}$ @Thickness 3.20 mm	248 $^{\circ}\text{F}$ @Thickness 0.126 in	
Vicat Softening Point	136 $^{\circ}\text{C}$	277 $^{\circ}\text{F}$	Rate B/50; ASTM D1525
	138 $^{\circ}\text{C}$	280 $^{\circ}\text{F}$	Rate B/50; ISO 306
	140 $^{\circ}\text{C}$	284 $^{\circ}\text{F}$	Rate B/120; ISO 306
UL RTI, Electrical	130 $^{\circ}\text{C}$	266 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical with Impact	120 $^{\circ}\text{C}$	248 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical without Impact	130 $^{\circ}\text{C}$	266 $^{\circ}\text{F}$	UL 746B
Flammability, UL94	V-2	V-2	UL 94
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	V-1	V-1	UL 94
	@Thickness 1.70 mm	@Thickness 0.0669 in	
	V-0	V-0	UL 94
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Glow Wire Test Thermal Properties	850 °C Metric	1560 °F English	IEC 60695-2-13 Comments
	960 °C	1760 °F	IEC 60695-2-12
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Optical Properties	Metric	English	Comments
Transmission, Visible	>= 88 %	>= 88 %	3.0 mm; SABIC Method
	>= 89 %	>= 89 %	2.0 mm; SABIC Method
	>= 90 %	>= 90 %	1.0 mm; SABIC Method

Electrical Properties	Metric	English	Comments
Dielectric Constant	2.78	2.78	ASTM ES 7-83
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
Dissipation Factor	0.0056	0.0056	ASTM ES 7-83
	@Frequency 1.10e+9 Hz	@Frequency 1.10e+9 Hz	

Descriptive Properties	Value	Comments
Ball Pressure Test, 125°C +/- 2°C	Pass	IEC 60695-10-2

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