

Makrolon® FR6005 HF

Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

MVR (300 °C/1.2 kg) 9.0 cm³/10 min; medium viscosity; easy release; flame retardant; impact modified; good surface quality; injection molding - melt temperature 300°C; electrical/electronic; housing parts

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Flame Retardant	• Impact Modifier	
Features	• Flame Retardant • Good Mold Release	• Good Surface Finish • Impact Modified	• Medium Viscosity
Uses	• Electrical/Electronic Applications	• Housings	
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		
ISO Designation	• PC-FR		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	16	cm³/10min	ISO 1133
Molding Shrinkage			ISO 2577
Across Flow	0.60 to 0.80	%	
Flow	0.60 to 0.80	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	335000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	8700	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	7980	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	5.7	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	100	%	ISO 527-2/50
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2/50
Flexural Modulus ² (73°F)	336000	psi	ISO 178
Flexural Stress ² (73°F)	13300	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F, Complete Break	8.6	ft·lb/in²	
73°F, Partial Break	27	ft·lb/in²	
Notched Izod Impact Strength ³			ISO 180/A
-22°F, Complete Break	7.6	ft·lb/in²	
73°F, Partial Break	27	ft·lb/in²	
Multi-Axial Instrumented Impact Energy (73°F)	37.6	ft·lb	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (73°F)	1120	lbf	ISO 6603-2
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	271	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	244	°F	ISO 75-2/A
Vicat Softening Temperature			
--	286	°F	ISO 306/B120
--	280	°F	ISO 306/B50



Ball Pressure Test (273°F)	Pass	IEC 60695-10-2
CLTE - Flow (73 to 131°F)	3.4E-5 in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	3.7E-5 in/in/°F	ISO 11359-2
Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
0.06 in	V-0	
0.12 in	V-0	
Glow Wire Flammability Index		IEC 60695-2-12
0.06 in	1760 °F	
0.12 in	1760 °F	
Glow Wire Ignition Temperature		IEC 60695-2-13
0.06 in	1560 °F	
0.12 in	1650 °F	

Processing Information

Injection	Nominal Value Unit
Drying Temperature - Dry Air Dryer	248 °F
Drying Time - Dry Air Dryer	2.0 to 3.0 hr
Suggested Max Moisture	< 0.020 %
Suggested Shot Size	30 to 70 %
Rear Temperature	482 to 500 °F
Middle Temperature	518 to 536 °F
Front Temperature	536 to 554 °F
Nozzle Temperature	554 to 572 °F
Processing (Melt) Temp	536 to 608 °F
Mold Temperature	176 to 248 °F
Back Pressure	725 to 2180 psi
Vent Depth	9.8E-4 to 3.0E-3 in

Injection Notes

Standard Melt Temperature: 300°C
Peripheral Screw Speed: 0.05 - 0.2 m/s
Hold Pressure (% of Injection Pressure): 50 - 75%

Notes

¹ Typical properties: these are not to be construed as specifications.

² 0.079 in/min

³ 3.0 mm

