



Makrolon® FR6005

/ 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

ISO Shortname

PC-FR

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	300 °C/ 1.2 kg	cm³/10 min	ISO 1133	9
Molding shrinkage, parallel/normal	Value range based on general practical experience	%	b.o. ISO 2577	0.6-0.8
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2300
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	62
C Yield strain	50 mm/min	%	ISO 527-1,-2	6
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
Stress at break	50 mm/min	MPa	ISO 527-1,-2	66
Strain at break	50 mm/min	%	b.o. ISO 527-1,-2	135
Flexural modulus	2 mm/min	MPa	ISO 178	2400
Flexural strength	2 mm/min	MPa	ISO 178	90
Charpy notched impact strength	23 °C	kJ/m²	ISO 21305/based on ISO 179/1eA	68P
Charpy notched impact strength	-10 °C	kJ/m²	ISO 21305/based on ISO 179/1eA	50C
Charpy notched impact strength	-30 °C	kJ/m²	ISO 21305/based on ISO 179/1eA	20C
Izod notched impact strength	23 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	60P
Izod notched impact strength	-10 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	50P(C)
Izod notched impact strength	-30 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	15C
C Puncture impact properties - maximum force	23 °C	N	ISO 6603-2	5100
C Puncture impact properties - maximum force	-30 °C	N	ISO 6603-2	6100
C Puncture energy	23 °C	J	ISO 6603-2	54
C Puncture energy	-30 °C	J	ISO 6603-2	55



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Property	Test Condition	Unit	Standard	typical Value
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	121
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	136
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	142
C Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	144
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.7
C Coefficient of linear thermal expansion, normal	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.7
C Burning behavior UL 94 [UL recognition]	1.0 mm (BK)	Class	UL 94	V-0
Burning behavior UL 94 [UL recognition]	1.2 mm	Class	UL 94	V-1
Burning behavior UL 94	1.2 mm (BK)	Class	UL 94	V-0
Burning behavior UL 94 [UL recognition]	1.5 mm	Class	UL 94	V-0
Burning behavior UL 94 [UL recognition]	3.0 mm	Class	UL 94	V-0
Resistance to heat (ball pressure test)		°C	IEC 60695-10-2	134
Relative temperature index (Tensile strength)	0.75 mm	°C	UL 746B	115
Relative temperature index (Tensile impact strength)	0.75 mm	°C	UL 746B	105
Relative temperature index (Electric strength)	0.75 mm	°C	UL 746B	115
Glow wire test (GWFI)	1.0 mm	°C	IEC 60695-2-12	850
Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-12	960
Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-12	960
Glow wire test (GWIT)	1.0 mm	°C	IEC 60695-2-13	875
Glow wire test (GWIT)	1.5 mm	°C	IEC 60695-2-13	850
Glow wire test (GWIT)	3.0 mm	°C	IEC 60695-2-13	900
Electrical properties (23 °C/50 % r. h.)				
C Volume resistivity		Ohm·m	IEC 60093	9E16
C Surface resistivity		Ohm	IEC 60093	4E17
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	200
Other properties (23 °C)				
C Density		kg/m³	ISO 1183-1	1200
Processing conditions for test specimens				
C Injection molding - Melt temperature		°C	ISO 294	300
C Injection molding - Mold temperature		°C	ISO 294	80
C Injection molding - Injection velocity		mm/s	ISO 294	200





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Property	Test Condition	Unit	Standard	typical Value
Recommended processing and drying conditions				
Melt temperatures		°C	-	280 - 320
Standard Melt temperature		°C	-	300
Barrel Temperatures - Rear		°C	-	250 - 260
Barrel Temperatures - Middle		°C	-	270 - 280
Barrel Temperatures - Front		°C	-	280 - 290
Barrel Temperatures - Nozzle		°C	-	290 - 300
Mold Temperatures		°C	-	80 - 120
Hold Pressure (% of injection pressure)		%	-	50 - 75
Plastic Back Pressure (specific)		bar	-	50 - 150
Peripheral Screw Speed		m/s	-	0.05 - 0.2
Shot-to-Cylinder Size		%	-	30 - 70
Dry Air Drying Temperature		°C	-	120
Dry Air Drying Time		h	-	2-3
Moisture Content max. (%)		%	-	<= 0,02
Vent Depth		mm	-	0.025 - 0.075

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

Impact properties: N = non-break, P = partial break, C = complete break

