



Makrolon® FR6040

Flame retardant grades / Medium viscosity

easy release; UV stabilized; flame retardant; improved chemical resistance compared to standard Makrolon grades; injection molding; Information technology; electrical/electronic

ISO Shortname

PC-I FR(40)

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	300 °C/ 1.2 kg	cm ³ /10 min	ISO 1133	10
Melt viscosity	1000 s ⁻¹ / 300 °C	Pa·s	b.o. ISO 11443-A	225
C Molding shrinkage, parallel	60x60x2 mm	%	ISO 294-4	0.75
C Molding shrinkage, normal	60x60x2 mm	%	ISO 294-4	0.7
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2200
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	55
C Yield strain	50 mm/min	%	ISO 527-1,-2	5.6
Stress at break	50 mm/min	MPa	ISO 527-1,-2	60
Strain at break	50 mm/min	%	b.o. ISO 527-1,-2	>=50
Flexural modulus	2 mm/min	MPa	ISO 178	2300
Flexural strength	2 mm/min	MPa	ISO 178	90
Flexural strain at flexural strength	2 mm/min	%	ISO 178	6.7
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	70
C Charpy impact strength	23 °C	kJ/m ²	ISO 179/1eU	N
Charpy notched impact strength	23 °C	kJ/m ²	ISO 21305/based on ISO 179/1eA	70
Charpy notched impact strength	-10 °C	kJ/m ²	ISO 21305/based on ISO 179/1eA	65
Charpy notched impact strength	-20 °C	kJ/m ²	ISO 21305/based on ISO 179/1eA	60
Charpy notched impact strength	-30 °C	kJ/m ²	ISO 21305/based on ISO 179/1eA	55
Izod notched impact strength	23 °C	kJ/m ²	ISO 21305/based on ISO 180/A	65
Izod notched impact strength	-10 °C	kJ/m ²	ISO 21305/based on ISO 180/A	60
Izod notched impact strength	-20 °C	kJ/m ²	ISO 21305/based on ISO 180/A	55
Izod notched impact strength	-30 °C	kJ/m ²	ISO 21305/based on ISO 180/A	50
Izod impact strength	-30 °C	kJ/m ²	ISO 180/U	N
C Puncture impact properties - maximum force	23 °C	N	ISO 6603-2	4780
C Puncture energy	23 °C	J	ISO 6603-2	45
Ball indentation hardness		N/mm ²	ISO 2039-1	110
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	114
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	129
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	135
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	136
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.63
C Coefficient of linear thermal expansion, normal	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.68
C Burning behavior UL 94 (1.5 mm) [UL recognition]		Class	UL 94	V-0
C Burning behavior UL 94-5V	2.0 mm	Class	UL 94	5 VB
Burning behavior UL 94-5V	3.0 mm	Class	UL 94	5 VA
Electrical properties (23 °C/50 % r. h.)				
C Volume resistivity		Ohm·m	IEC 60093	1E+16
C Surface resistivity		Ohm	IEC 60093	1E+17





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Other properties (23 °C)				
C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.18
C Density		kg/m³	ISO 1183-1	1200
Processing conditions for test specimens				
C Injection molding - Melt temperature		°C	ISO 294	280-300
C Injection molding - Mold temperature		°C	ISO 294	80
Recommended processing and drying conditions				
Dry Air Drying Temperature		°C	-	120
Dry Air Drying Time		h	-	>4

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

