Makrolon® FR6020

/	polycarbonate; medium viscosity; easy release; UV stabilized; flame retardant; chlorine- and bromine-free flame retardancy; non-reinforced; good hydrolysis resistance; impact modified; 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	cm³/10 min	ISO 1133	9
	Melt viscosity	1000 s^{-1}/ 300 °C	Pa·s	b.o. ISO 11443-A	260
	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	2380
C	Yield stress	50 mm/min	MPa	ISO 527-1,-2	58
C	Yield strain	50 mm/min	%	ISO 527-1,-2	6
	Stress at break	50 mm/min	MPa	ISO 527-1,-2	58
	Strain at break	50 mm/min	%	b.o. ISO 527-1,-2	> 100
	Flexural modulus	2 mm/min	MPa	ISO 178	2430
	Flexural strength	2 mm/min	MPa	ISO 178	90
	Flexural strain at flexural strength	2 mm/min	%	ISO 178	6
	Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	74
C	Charpy impact strength	23 °C	kJ/m²	ISO 179/1eU	N
	Charpy notched impact strength	23 °C	kJ/m²	ISO 21305/based on ISO 179/1eA	69P
	Charpy notched impact strength	-20 °C	kJ/m²	ISO 21305/based on ISO 179/1eA	56C
	Charpy notched impact strength	-30 °C	kJ/m²	ISO 21305/based on ISO 179/1eA	33C
	Izod notched impact strength	23 °C	kJ/m²	ISO 21305/based on ISO 180/A	67P
	Izod notched impact strength	-20 °C	kJ/m²	ISO 21305/based on ISO 180/A	46P
	Izod notched impact strength	-30 °C	kJ/m²	ISO 21305/based on ISO 180/A	26C
	Izod impact strength	23 °C	kJ/m²	ISO 180/U	N
	Izod impact strength	-30 °C	kJ/m²	ISO 180/U	N
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	127
C	Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	134
	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	0.49
C	Coefficient of linear thermal expansion, normal	23 to 55 °C	10^{-4}/K	ISO 11359-1,-2	0.58
C	Burning behavior UL 94 (1.5 mm)		Class	UL 94	V-0
C	Burning behavior UL 94	2.0 mm	Class	UL 94	V-0
C	Burning behavior UL 94-5V	2.0 mm	Class	UL 94	5VB
	Burning behavior UL 94-5V	3.0 mm	Class	UL 94	5VA
	Relative temperature index (Tensile strength)	1.5 mm	°C	UL 746B	125
	Relative temperature index (Tensile impact strength)	1.5 mm	°C	UL 746B	115
	Relative temperature index (Electric strength)	1.5 mm	°C	UL 746B	125
Other properties (23 °C)					
C	Density		kg/m³	ISO 1183-1	1200

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	Property	Test Condition	Unit	Standard	typical Value
Processing conditions for test specimens					
C	Injection molding - Melt temperature		°C	ISO 294	280-300
C	Injection molding - Mold temperature		°C	ISO 294	80

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