Makrolon® EM9417

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MVR (300 °C/1.2 kg) 6.0 cm³/10 min; 10 % glass fiber reinforced; flame retardant; high viscosity; UV stabilized; easy release; injection molding - melt temperature 310 - 330 °C; available in opaque colors only

ISO Shortname

	Property	Test Condition	Unit	Standard	typical Value
Rheological properties					
C	Melt volume-flow rate	300 °C/ 1.2 kg	cm³/10 min	ISO 1133	6.0
C	Molding shrinkage, parallel	60x60x2 mm/ 500 bar	%	ISO 294-4	0.6
C	Molding shrinkage, normal	60x60x2 mm/ 500 bar	%	ISO 294-4	0.5
	Molding shrinkage, parallel/normal	Value range based on general practical experience	%	b.o. ISO 2577	0.4 - 0.6
Mechanical properties (23 °C/50 % r. h.)					
C	Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	3700
	Yield stress	5 mm/min	MPa	ISO 527-1,-2	60
	Yield strain	5 mm/min	%	ISO 527-1,-2	5
C	Stress at break	5 mm/min	MPa	ISO 527-1,-2	45
C	Strain at break	5 mm/min	%	ISO 527-1,-2	15
C	Charpy impact strength	23 °C	kJ/m²	ISO 179/1eU	75C(N)
Thermal properties					
C	Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	135
C	Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	141
C	Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	143
	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	0.4
C	Coefficient of linear thermal expansion, normal	23 to 55 °C	10^{-4}/K	ISO 11359-1,-2	0.6
C	Burning behavior UL 94 (1.5 mm) [UL recognition]	1.5 mm	Class	UL 94	V-0
C	Oxygen index	Method A	%	ISO 4589-2	35
	Relative temperature index (Tensile strength) [UL recognition]	1.5 mm	°C	UL 746B	125
	Relative temperature index (Tensile impact strength) [UL recognition]	1.5 mm	°C	UL 746B	115
	Relative temperature index (Electric strength) [UL recognition]	1.5 mm	°C	UL 746B	125
	Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-12	960
Electrical properties (23 °C/50 % r. h.)					
C	Volume resistivity		Ohm·m	IEC 60093	1E14
C	Surface resistivity		Ohm	IEC 60093	1E16
C	Comparative tracking index CTI	Solution A	Rating	IEC 60112	175
Other properties (23 °C)					
C	Density		kg/m³	ISO 1183-1	1270
	Glass fiber content	Method A	%	b.o. ISO 3451-1	10
Processing conditions for test specimens					
C	Injection molding - Melt temperature		°C	ISO 294	300
C	Injection molding - Mold temperature		°C	ISO 294	110
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