



Makrolon 8025

Glass fiber reinforced grades / 20 % Glass fiber reinforced

MFR 6.5 g/10 min; 20 % Glass fiber reinforced; Milled fiber; High viscosity; Easy release; Extrusion; Injection molding; Available in opaque colors only; Precision parts

ISO Shortname

ISO 7391-PC,GR,(,)-05-3,GF20

Property	Test Condition	Unit	Standard	Value
Rheological properties				
C Melt volume-flow rate	300 °C; 1.2 kg	cm ³ /(10 min)	ISO 1133	5.5
Molding shrinkage, parallel/normal	Value range based on general practical experience	%	acc. ISO 2577	0.3 - 0.45
Melt mass-flow rate	300 °C; 1.2 kg	g/(10 min)	ISO 1133	6.5
Mechanical properties (23 °C/50 % r.h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	4000
C Stress at break	5 mm/min	MPa	ISO 527-1,-2	55
C Strain at break	5 mm/min	%	ISO 527-1,-2	5.0
C Tensile creep modulus	1 h	MPa	ISO 899-1	3800
C Tensile creep modulus	1000 h	MPa	ISO 899-1	3600
Flexural modulus	2 mm/min	MPa	ISO 178	3800
Flexural strength	2 mm/min	MPa	ISO 178	110
Flexural strain at flexural strength	2 mm/min	%	ISO 178	5.0
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	100
C Charpy impact strength	23 °C	kJ/m ²	ISO 179-1eU	50
C Charpy impact strength	-30 °C	kJ/m ²	ISO 179-1eU	55
Charpy notched impact strength	23 °C; 3 mm	kJ/m ²	acc. ISO 179-1eA	8C
Izod notched impact strength	23 °C; 3.2 mm	kJ/m ²	acc. ISO 180-A	8C
C Puncture maximum force	23 °C	N	ISO 6603-2	1800
C Puncture maximum force	-30 °C	N	ISO 6603-2	900
C Puncture energy	23 °C	J	ISO 6603-2	5
C Puncture energy	-30 °C	J	ISO 6603-2	5
Ball indentation hardness		N/mm ²	ISO 2039-1	140
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	142
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	147
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	148
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.45
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.6
C Burning behavior UL 94 (1.6 mm) [UL listed]	1.5 mm	Class	UL 94	V-2
C Burning behavior UL 94 [UL listed]	3.0 mm	Class	UL 94	V-2
Burning behavior UL 94 [UL listed]	6.0 mm	Class	UL 94	V-1
C Oxygen index	Method A	%	ISO 4589-2	30
Thermal conductivity	23 °C	W/(m·K)	ISO 8302	0.23
Resistance to heat (ball pressure test)		°C	IEC 60335-1	136
Temperature index (Tensile strength)	20000 h; 1.5 mm	°C	IEC 60216-1	135
Halving interval (Tensile strength)	1.5 mm	°C	IEC 60216-1	7.4
Temperature index (Tensile impact strength)	20000 h; 1.5 mm	°C	IEC 60216-1	125
Halving interval (Tensile impact strength)	1.5 mm	°C	IEC 60216-1	7.7
Temperature index (Electric strength)	20000 h; 1.5 mm	°C	IEC 60216-1	140
Halving interval (Electric strength)	1.5 mm	°C	IEC 60216-1	4.9
Relative temperature index (Tensile strength) [UL listed]	1.5 mm	°C	UL 746 B	125
Relative temperature index (Tensile impact strength) [UL listed]	1.5 mm	°C	UL 746 B	115
Relative temperature index (Electric strength) [UL listed]	1.5 mm	°C	UL 746 B	125
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)	2.0 mm	°C	IEC 60695-2-12	960
Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-12	960
Application of flame from small burner	Method K and F; 2.0 mm	Class	DIN 53438-1,-3	K1, F1
Needle flame test	Method K; 1.5 mm	s	IEC 60695-2-2	60
Needle flame test	Method K; 2.0 mm	s	IEC 60695-2-2	60
Needle flame test	Method K; 3.0 mm	s	IEC 60695-2-2	120



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Property	Test Condition	Unit	Standard	Value
Needle flame test	Method F; 1.5 mm	s	IEC 60695-2-2	120
Needle flame test	Method F; 2.0 mm	s	IEC 60695-2-2	120
Needle flame test	Method F; 3.0 mm	s	IEC 60695-2-2	120
Incandescent bar test		Rating	IEC 60707-BH	BH2/< 30 mm
Burning rate (US-FMVSS)	>=1.0 mm	mm/min	ISO 3795	passed

Electrical properties (23 °C/50 % r.h.)

C Relative permittivity	100 Hz	-	IEC 60250	3.4
C Relative permittivity	1 MHz	-	IEC 60250	3.3
C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	10
C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	80
C Volume resistivity		Ohm·m	IEC 60093	1E14
C Surface resistivity		Ohm	IEC 60093	1E16
C Electric strength	1 mm	kV/mm	IEC 60243-1	36
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	175
Comparative tracking index CTI M	Solution B	Rating	IEC 60112	125
Electrolytic corrosion		Rating	IEC 60426	A1

Other properties (23 °C)

C Water absorption (Saturation value)	Water at 23 °C	%	ISO 62	0.22
C Water absorption (Equilibrium value)	23 °C; 50 % RH	%	ISO 62	0.10
C Density		kg/m ³	ISO 1183	1340
Glass fiber content		%	ISO 3451-1	20
Bulk density	Pellets	kg/m ³	ISO 60	720

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