Makrolon® 6485

Polycarbonate

Bayer MaterialScience AG

IDES | Prospector

Product Description

Global grade; MVR (300 °C/1.2 kg) 9.5 cm³/10 min; Flame retardant; UL 94V-0/1.5 mm and 5VA/3.0 mm; Medium viscosity; Easy release; Injection molding - Melt temperature 280 - 320 °C; Available in opaque colors only

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	
Features	• Flame Retardant	• Good Mold Release	• Medium Viscosity
Appearance	• Colors Available	• Opaque	
Forms	• Pellets		
Processing Method	• Injection Molding		
Multi-Point Data	• Creep Modulus vs. Time (ISO 11403-1) • Isochronous Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (ISO 11403-1)	• Secant Modulus vs. Strain (ISO 11403-1) • Shear Modulus vs. Temperature (ISO 11403-2) • Specific Volume vs Temperature (ISO 11403-2)	• Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.0434 lb/in³	0.0434 lb/in³	ISO 1183 [2]
Apparent Density	0.64 g/cm³	0.64 g/cm³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10 g/10 min	10 g/10 min	ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	0.580 in³/10min	0.580 in³/10min	ISO 1133 [2]
Molding Shrinkage			
Across Flow: 0.0787 in [3]	0.70 %	0.70 %	ISO 294-4
Flow: 0.0787 in [3]	0.65 %	0.65 %	ISO 294-4
Flow	0.60 to 0.80 %	0.60 to 0.80 %	ISO 2577 [2]
Across Flow	0.60 to 0.80 %	0.60 to 0.80 %	ISO 2577 [2]
Water Absorption			ISO 62 [2]
Saturation	0.30 %	0.30 %	
Equilibrium	0.12 %	0.12 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile modulus	348000 psi	348000 psi	ISO 527-2 [2]
Tensile Stress			
Yield	9570 psi	9570 psi	ISO 527-2 [2]
Break	9430 psi	9430 psi	ISO 527-2/50
Tensile Strain			
Yield	6.1 %	6.1 %	ISO 527-2 [2]
Break	120 %	120 %	ISO 527-2/50
Nominal strain at break	> 50 %	> 50 %	ISO 527-2 [2]
Tensile Creep Modulus			ISO 899-1 [2]
1 hr	319000 psi	319000 psi	
1000 hr	276000 psi	276000 psi	
Flexural Modulus [4]	348000 psi	348000 psi	ISO 178
Flexural Strength [4]			ISO 178
3.5% Strain	10700 psi	10700 psi	
--	14200 psi	14200 psi	

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Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F, Complete Break	6.66 ft·lb/in²	6.66 ft·lb/in²	
73°F, Partial Break	38.1 ft·lb/in²	38.1 ft·lb/in²	
Charpy Unnotched Impact Strength			
-76°F	No Break	No Break	ISO 179/1eU
73°F	No Break	No Break	ISO 179/1eU [2]
-22°F	No Break	No Break	ISO 179/1eU [2]
Notched Izod Impact Strength			ISO 180/A
-22°F, Complete Break	6.66 ft·lb/in²	6.66 ft·lb/in²	
73°F, Partial Break	33.3 ft·lb/in²	33.3 ft·lb/in²	
Puncture energy			ISO 6603-2 [2]
73°F	36.9 ft·lb	36.9 ft·lb	
-22°F	40.6 ft·lb	40.6 ft·lb	
Puncture - maximum force			ISO 6603-2 [2]
73°F	1170 lbf	1170 lbf	
-22°F	1350 lbf	1350 lbf	

Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Ball Indentation Hardness	16700 psi	16700 psi	ISO 2039-1

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ISO 75-2 [2]
66 psi	277 °F	277 °F	
264 psi	255 °F	255 °F	
Vicat Softening Temperature			
--	293 °F	293 °F	ISO 306/B120
50°C/h, B (50N)	291 °F	291 °F	ISO 306 [2]
CLTE			ISO 11359-2 [2]
Flow	0.000036 in/in/°F	0.000036 in/in/°F	
Transverse	0.000036 in/in/°F	0.000036 in/in/°F	
Thermal Conductivity (73°F)	1.4 Btu·in/hr/ft²/°F	1.4 Btu·in/hr/ft²/°F	ISO 8302

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface resistivity	1.0E+16 ohms	1.0E+16 ohms	IEC 60093 [2]
Volume resistivity	3.9E+15 ohm·in	3.9E+15 ohm·in	IEC 60093 [2]
Relative Permittivity			IEC 60250 [2]
100 Hz	3.10	3.10	
1 MHz	3.00	3.00	
Dissipation Factor			IEC 60250 [2]
100 Hz	0.00080	0.00080	
1 MHz	0.0090	0.0090	
Comparative Tracking Index			
Solution B	125 V	125 V	IEC 60112
--	225	225	IEC 60112 [2]
Electric strength	860 V/mil	860 V/mil	IEC 60243-1 [2]

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Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.0591 in	V-0	V-0	
0.118 in	• V-0 • 5VA	• V-0 • 5VA	
0.236 in	• V-0 • 5VA	• V-0 • 5VA	
Glow Wire Flammability Index			IEC 60695-2-12
0.0295 in	1760 °F	1760 °F	
0.0591 in	1760 °F	1760 °F	
0.118 in	1760 °F	1760 °F	
0.236 in	1760 °F	1760 °F	
Oxygen index	35 %	35 %	ISO 4589-2 [2]

UL 746	Nominal Value (English)	Nominal Value (SI)	Test Method
RTI Str (0.0591 in)	257 °F	257 °F	UL 746
RTI Imp (0.0591 in)	239 °F	239 °F	UL 746
RTI Elec (0.0591 in)	257 °F	257 °F	UL 746

Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
Application of Flame from Small Burner			DIN 53438-1, -3
0.0787 in, Method K and F	K1, F1	K1, F1	
Ball Pressure Test	277 °F	277 °F	IEC 60695-10-2
Burning Rate (0.0394 in)	Passed	Passed	ISO 3795
Electrolytical Corrosion	A1	A1	IEC 60426
Flammability - CSTB			NF P 92501
0.0787 in	M1	M1	
0.118 in	M3	M3	
0.157 in	M4	M4	
Flash Ignition Temperature	860 °F	860 °F	ASTM D1929
Flexural Strain at Flexural Strength			ISO 178
73°F, 2 mm/min	7.1 %	7.1 %	
Glow Wire Test			EDF HN60 E.02
0.0591 in	1382 °F	1382 °F	
0.118 in	1382 °F	1382 °F	
Halving Interval			IEC 60216
Electric Strength: 0.0591 in	49 °F	49 °F	
Tensile Strength: 0.0591 in	45 °F	45 °F	
Tensile Impact Strength: 0.0591 in	45 °F	45 °F	
ISO Shortname	PC,MFR,(,,)-09-9	PC,MFR,(,,)-09-9	ISO 7391
Needle Flame Test			IEC 60695-2-2
0.0591 in, Method F	2.0 min	2.0 min	
0.0591 in, Method K	2.0 min	2.0 min	
0.0787 in, Method F	2.0 min	2.0 min	
0.0787 in, Method K	2.0 min	2.0 min	
0.118 in, Method F	2.0 min	2.0 min	
0.118 in, Method K	2.0 min	2.0 min	
Self Ingnition Temperature	986 °F	986 °F	ASTM D1929
Temperature Index			IEC 60216
Electric Strength: 0.0591 in, 20000 hr	275 °F	275 °F	
Tensile Strength: 0.0591 in, 20000 hr	266 °F	266 °F	
Tensile Impact Strength: 0.0591 in, 20000 hr	257 °F	257 °F	

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Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

[3] 60x60x2, 500 bar

[4] 0.079 in/min

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