

Makrolon® 9425

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 5.0 cm³/10 min; 20 % glass fiber reinforced; flame retardant; UL 94V-0/1.5 mm and 5VA/3.0 mm; high viscosity; easy release; injection molding - melt temperature 310 - 330 °C; extrusion; available in opaque colors only

General Information			
UL YellowCard	E41613-233166	E41613-233167	
Filler / Reinforcement	Glass Fiber,20% Filler by Weight		
Additive	Flame Retardant		
Features	Flame Retardant		
	Good Mold Release		
	High Viscosity		
RoHS Compliance	RoHS Compliant		
Appearance	Colors Available		
	Opaque		
Processing Method	Extrusion		
	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 11403-1)		
	Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.34	g/cm³	ISO 1183
Apparent Density ¹	0.64	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	5.00	cm³/10min	ISO 1133
Molding Shrinkage			
Across Flow	0.30 to 0.50	%	ISO 2577
Flow	0.30 to 0.50	%	ISO 2577
Across Flow : 2.00 mm ²	0.45	%	ISO 294-4
Flow : 2.00 mm ³	0.35	%	ISO 294-4
Water Absorption			ISO 62

Saturation, 23°C	0.24	%	
Equilibrium, 23°C, 50% RH	0.10	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	148	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	5800	MPa	ISO 527-2/1
Tensile Stress (Break, 23°C)	86.0	MPa	ISO 527-2/5
Tensile Strain (Break, 23°C)	2.6	%	ISO 527-2/5
Tensile Creep Modulus			ISO 899-1
1 hr	5700	MPa	
1000 hr	5200	MPa	
Flexural Modulus ⁴ (23°C)	5500	MPa	ISO 178
Flexural Stress ⁵ (23°C)	135	MPa	ISO 178
Flexural Strain at Flexural Strength (23°C) ⁶	3.5	%	ISO 178
Application of Flame from Small Burner			
2.00 mm	B2		DIN 4102
Method K and F : 2.00 mm	K1, F1		DIN 53438-1, -3
Burning Rate - US-FMVSS (> 1.00 mm)	passed		ISO 3795
Flash Ignition Temperature	470	°C	ASTM D1929
Needle Flame Test			IEC 60695-11-5
Method F : 1.50 mm	2.0	min	
Method F : 2.00 mm	2.0	min	
Method F : 3.00 mm	2.0	min	
Method K : 1.50 mm	1.0	min	
Method K : 2.00 mm	2.0	min	
Method K : 3.00 mm	2.0	min	
Self Ignition Temperature	550	°C	ASTM D1929
Electrolytical Corrosion (23°C)	A1		IEC 60426
ISO Shortname	ISO 7391-PC,MFR,(,,)-05-3,GF20		
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷ (23°C, Complete Break)	8.0	kJ/m ²	ISO 7391
Charpy Unnotched Impact Strength			ISO 179/1eU
-60°C, Complete Break	50	kJ/m ²	
-30°C, Complete Break	50	kJ/m ²	
23°C, Complete Break	40	kJ/m ²	
Notched Izod Impact Strength ⁸ (23°C, Complete Break)	8.0	kJ/m ²	ISO 7391
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	5.00	J	
23°C	5.00	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2

-30°C	900	N	
23°C	900	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	142	°C	ISO 75-2/B
1.8 MPa, Unannealed	138	°C	ISO 75-2/A
Vicat Softening Temperature			
--	146	°C	ISO 306/B50
--	148	°C	ISO 306/B120
Ball Pressure Test (136°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2
Flow : 23 to 55°C	3.0E-5	cm/cm/°C	
Transverse : 23 to 55°C	6.5E-5	cm/cm/°C	
Thermal Conductivity ⁹ (23°C)	0.23	W/m/K	ISO 8302
RTI Elec (1.50 mm)	130	°C	UL 746
RTI Imp (1.50 mm)	125	°C	UL 746
RTI Str (1.50 mm)	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Electric Strength (23°C, 1.00 mm)	36	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
23°C, 100 Hz	3.30		
23°C, 1 MHz	3.30		
Dissipation Factor			IEC 60250
23°C, 100 Hz	1.0E-3		
23°C, 1 MHz	9.0E-3		
Comparative Tracking Index			IEC 60112
Solution A	175	V	
Solution B	125	V	
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.500 mm	V-2		
1.50 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index			IEC 60695-2-12
0.750 mm	960	°C	
1.50 mm	960	°C	
3.00 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	875	°C	
1.50 mm	875	°C	

3.00 mm	875	°C	
Oxygen Index ¹⁰	35	%	ISO 4589-2
NOTE			
1.	Pellets		
2.	60x60x2 mm, 500 bar		
3.	60x60x2 mm, 500 bar		
4.	2.0 mm/min		
5.	2.0 mm/min		
6.	2 mm/min		
7.	Based on ISO 179-1eA, 3 mm		
8.	Based on ISO 180-A, 3 mm		
9.	Cross-flow		
10.	Procedure A		

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