

Makrolon® 6165 X

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 28 cm³/10 min; flame retardant; UL 94V-0/1.2 mm; low viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in opaque colors only; LCD tv frame

General Information			
UL YellowCard	E41613-100126177		
Additive	Flame Retardant		
Features	Flame Retardant		
	Good Mold Release		
	Low Viscosity		
RoHS Compliance	RoHS Compliant		
Appearance	Colors Available		
	Opaque		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.20	g/cm ³	ISO 1183
Apparent Density ¹	0.64	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	30	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	28.0	cm ³ /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.50 to 0.70	%	ISO 2577
Flow	0.50 to 0.70	%	ISO 2577
Across Flow : 2.00 mm ²	0.70	%	ISO 294-4
Flow : 2.00 mm ³	0.65	%	ISO 294-4
Water Absorption			ISO 62
Saturation, 23°C	0.30	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2350	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	65.0	MPa	
Break, 23°C	55.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	6.0	%	
Break, 23°C	120	%	

Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁴			ISO 7391
-30°C, Complete Break	12	kJ/m ²	
23°C, Complete Break	15	kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact Strength ⁵			ISO 7391
-30°C, Complete Break	11	kJ/m ²	
23°C, Partial Break	15	kJ/m ²	
Multi-Axial Instrumented Impact Energy (23°C)	45.0	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (23°C)	4800	N	ISO 6603-2
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	136	°C	ISO 75-2/B
1.8 MPa, Unannealed	124	°C	ISO 75-2/A
Vicat Softening Temperature	143	°C	ISO 306/B50
CLTE			ISO 11359-2
Flow : 23 to 55°C	6.5E-5	cm/cm/°C	
Transverse : 23 to 55°C	6.5E-5	cm/cm/°C	
Thermal Conductivity ⁶ (23°C)	0.20	W/m/K	ISO 8302
RTI Elec (1.50 mm)	125	°C	UL 746
RTI Imp (1.50 mm)	115	°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)	34	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
23°C, 100 Hz	3.10		
23°C, 1 MHz	3.00		
Comparative Tracking Index			IEC 60112
Solution A	225	V	
Solution B	125	V	
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.20 mm)	V-0		UL 94
Glow Wire Flammability Index			IEC 60695-2-12
1.50 mm	960	°C	
3.00 mm	960	°C	
Oxygen Index ⁷	35	%	ISO 4589-2

Burning Rate - US-FMVSS (> 1.00 mm)	passed	ISO 3795	
Flash Ignition Temperature	460	°C	ASTM D1929
Self Ignition Temperature	530	°C	ASTM D1929
ISO Shortname	ISO 7391-PC,MFR,(,,)-24-9		

NOTE			
1.	Pellets		
2.	60x60x2 mm, 500 bar		
3.	60x60x2 mm, 500 bar		
4.	Based on ISO 179-1eA, 3 mm		
5.	Based on ISO 180-A, 3 mm		
6.	Cross-flow		
7.	Procedure A		

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