

Makrolon® 2405 MAS057

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 19 cm³/10 min; improved impact strength; low viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in dark colors only

General Information			
UL YellowCard	E41613-100441688		
Features	General Purpose		
	Good Impact Resistance		
	Good Mold Release		
	Low Viscosity		
Uses	General Purpose		
RoHS Compliance	RoHS Compliant		
Appearance	Colors Available		
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)	20	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	19.0	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			
Saturation, 23°C	0.30	%	ISO 62
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	113	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2400	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	62.0	MPa	ISO 527-2/50
Break, 23°C	65.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	5.8	%	

Break, 23°C	120	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Flexural Modulus ⁴ (23°C)	2400	MPa	ISO 178
Flexural Stress ⁵			ISO 178
3.5% Strain, 23°C	72.0	MPa	
23°C	93.0	MPa	
Flexural Strain at Flexural Strength ⁶ (23°C)	6.8	%	ISO 178
Burning Rate - US-FMVSS (> 1.00 mm)	passed		ISO 3795
Flash Ignition Temperature	460	°C	ASTM D1929
Self Ignition Temperature	540	°C	ASTM D1929
Electrolytical Corrosion (23°C)	A1		IEC 60426
ISO Shortname	ISO 7391-PC,MPR,(,,)-18-9		
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷			ISO 7391
-30°C, Complete Break	16	kJ/m ²	
23°C, Partial Break	60	kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-60°C	No Break		
-30°C	No Break		
23°C	No Break		
Notched Izod Impact Strength ⁸			ISO 7391
-30°C, Complete Break	15	kJ/m ²	
23°C, Partial Break	60	kJ/m ²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	55.0	J	
23°C	50.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	5800	N	
23°C	4900	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	136	°C	ISO 75-2/B
1.8 MPa, Unannealed	123	°C	ISO 75-2/A
Vicat Softening Temperature			
--	143	°C	ISO 306/B50
--	144	°C	ISO 306/B120
Ball Pressure Test (136°C)	Pass		IEC 60695-10-2
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 ⁹ (23°C)	0.20	W/m/K	ISO 8302

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		
Dissipation Factor			IEC 60250
23°C, 100 Hz	1.0E-3		
23°C, 1 MHz	0.011		
Comparative Tracking Index			IEC 60112
Solution A	250	V	
Solution B	125	V	
Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index			IEC 60695-2-12
1.00 mm	800	°C	
1.50 mm	800	°C	
2.00 mm	850	°C	
3.00 mm	930	°C	
4.00 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	825	°C	
1.50 mm	825	°C	
2.00 mm	825	°C	
3.00 mm	850	°C	
4.00 mm	850	°C	
Oxygen Index ¹⁰	30	%	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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