

Makrolon® 2405 MAS057

Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

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

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Features	• General Purpose	• Good Mold Release	
	• Good Impact Resistance	• Low Viscosity	
Uses	• General Purpose		
RoHS Compliance	• RoHS Compliant		
Appearance	• Colors Available		
Processing Method	• Injection Molding		
ISO Designation	• PC-I		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm³	ISO 1183
Apparent (Bulk) Density ²	0.64	g/cm³	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	cm³/10min	ISO 1133
Molding Shrinkage			
Across Flow	0.50 to 0.70	%	ISO 2577
Flow	0.50 to 0.70	%	ISO 2577
Across Flow : 536°F, 0.0787 in ³	0.70	%	ISO 294-4
Flow : 0.0787 in ³	0.65	%	ISO 294-4
Water Absorption (Saturation, 73°F)	0.30	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	348000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	8990	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	9430	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	5.8	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	120	%	ISO 527-2/50
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2/50
Flexural Modulus ⁴ (73°F)	348000	psi	ISO 178
Flexural Stress ⁴			ISO 178
73°F	13500	psi	
3.5% Strain, 73°F	10400	psi	
Flexural Strain at Flexural Strength ⁵ (73°F)	6.8	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁶			ISO 179/1eA
-22°F, Complete Break	7.6	ft·lb/in²	
73°F, Partial Break	29	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-76°F	No Break		



-22°F	No Break	
73°F	No Break	
Notched Izod Impact Strength ⁶		ISO 180/A
-22°F, Complete Break	7.1 ft·lb/in ²	
73°F, Partial Break	29 ft·lb/in ²	
Multi-Axial Instrumented Impact Energy		ISO 6603-2
-22°F	40.6 ft·lb	
73°F	36.9 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	1300 lbf	
73°F	1100 lbf	
Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness	16400 psi	ISO 2039-1
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	277 °F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	253 °F	ISO 75-2/A
Vicat Softening Temperature		
--	291 °F	ISO 306/B120
--	289 °F	ISO 306/B50
Ball Pressure Test (277°F)	Pass	IEC 60695-10-2
CLTE - Flow (73 to 131°F)	3.6E-5 in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	3.6E-5 in/in/°F	ISO 11359-2
Thermal Conductivity ⁷ (73°F)	1.4 Btu·in/hr/ft ² /°F	ISO 8302
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	1.0E+16 ohms	IEC 60093
Volume Resistivity (73°F)	1.0E+16 ohms·cm	IEC 60093
Electric Strength (73°F, 0.0394 in)	860 V/mil	IEC 60243-1
Relative Permittivity		IEC 60250
73°F, 100 Hz	3.10	
73°F, 1 MHz	3.00	
Dissipation Factor		IEC 60250
73°F, 100 Hz	1.0E-3	
73°F, 1 MHz	0.011	
Comparative Tracking Index		IEC 60112
Solution A	250 V	
Solution B	125 V	
Electrolytic Corrosion (73°F)	A1	IEC 60426
Flammability	Nominal Value Unit	Test Method
Glow Wire Flammability Index		IEC 60695-2-12
0.04 in	1470 °F	
0.06 in	1470 °F	
0.08 in	1560 °F	
0.12 in	1710 °F	
0.16 in	1760 °F	
Glow Wire Ignition Temperature		IEC 60695-2-13
0.04 in	1520 °F	
0.06 in	1520 °F	
0.08 in	1520 °F	
0.12 in	1560 °F	
0.16 in	1560 °F	
Oxygen Index ⁸	30 %	ISO 4589-2
Burning Rate ⁹ (> 39.4 mil)	passed	ISO 3795
Flash Ignition Temperature	860 °F	ASTM D1929
Self Ignition Temperature	1004 °F	ASTM D1929

Processing Information

Injection	Nominal Value Unit
Temperature - Dry Air Dryer	24
Temperature - Dry Air Dryer	2.0 to 3.
Maximum Moisture	< 0.02
Injection Temperature	30 to 7

Rear Temperature	482 to 500 °F
Middle Temperature	518 to 536 °F
Front Temperature	536 to 554 °F
Nozzle Temperature	554 to 572 °F
Processing (Melt) Temp	536 to 608 °F
Mold Temperature	176 to 248 °F
Back Pressure	725 to 2180 psi
Vent Depth	9.8E-4 to 3.0E-3 in

Injection Notes

Hold Pressure (% of Injection Pressure): 50 - 75%
Standard Melt Temperature: 300°C
Peripheral Screw Speed: 0.05 - 0.2 m/s

Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² Pellets
- ³ 60x60x2mm, 500 bar
- ⁴ 0.079 in/min
- ⁵ 2.0 mm/min
- ⁶ 3.0 mm
- ⁷ Across Flow
- ⁸ Procedure A
- ⁹ US-FMVSS

