

Makrolon® 6455

Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

MVR (300°C/1.2 kg) 12 cm³/10 min; flame retardant; UL 94V-0/3.0 mm; medium viscosity; easy release; injection molding - melt temperature 280 - 320°C; available in transparent, translucent and opaque colors

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Additive	• Flame Retardant		
Features	• Flame Retardant	• Good Mold Release	• Medium Viscosity
RoHS Compliance	• RoHS Compliant		
Appearance	• Clear/Transparent	• Opaque	
	• Colors Available	• Translucent	
Processing Method	• Injection Molding		
ISO Designation	• ISO 7391-PC,MFR,(,)-18-9		

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)	13	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	12	cm³/10min	ISO 1133
Molding Shrinkage			
Across Flow	0.60 to 0.80	%	ISO 2577
Flow	0.60 to 0.80	%	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)	9570	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	9430	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.1	%	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	14200	psi	
3.5% Strain, 73°F	10700	psi	
Flexural Strain at Flexural Strength ⁵ (73°F)	7.1	%	ISO 178
Films	Nominal Value	Unit	Test Method
Water Vapor Transmission Rate (73°F, 85% RH, 3.9 mil)	0.97	g/100 in²/24 hr	ISO 15106-1
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁶			ISO 179/1eA
-22°F, Complete Break	6.7	ft·lb/in²	
73°F, Partial Break	33	ft·lb/in²	



Charpy Unnotched Impact Strength		ISO 179/1eU
-22°F	No Break	
73°F	No Break	
Notched Izod Impact Strength ⁶		ISO 180/A
-22°F, Complete Break	6.7 ft·lb/in ²	
73°F, Partial Break	31 ft·lb/in ²	
Multi-Axial Instrumented Impact Energy		ISO 6603-2
-22°F	47.9 ft·lb	
73°F	44.3 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	1420 lbf	
73°F	1210 lbf	
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)	255 °F	ISO 75-2/A
Glass Transition Temperature ⁷	293 °F	ISO 11357-2
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 ⁸ (73°F)	1.4 Btu·in/hr/ft ² /°F	ISO 8302
RTI Elec (0.06 in)	257 °F	UL 746B
RTI Imp (0.06 in)	239 °F	UL 746B
RTI Str (0.06 in)	257 °F	UL 746B
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	8.0E-4	
73°F, 1 MHz	9.0E-3	
Comparative Tracking Index		IEC 60112
Solution A	225 V	
Solution B	125 V	
Electrolytic Corrosion (73°F)	A1	IEC 60426
Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
0.06 in	V-2	
0.12 in	V-0	
Glow Wire Flammability Index		IEC 60695-2-12
0.04 in	1610 °F	
0.06 in	1760 °F	
0.08 in	1760 °F	
0.12 in	1760 °F	
0.16 in	1760 °F	
Oxygen Index ⁹	35 %	ISO 4589-2
Burning Rate ¹⁰ (> 39.4 mil)	passed	ISO 3795
Flash Ignition Temperature	860 °F	ASTM D1929
Self Ignition Temperature	986 °F	ASTM D1929
Optical	Nominal Value Unit	Test Method
Refractive Index ¹¹	1.586	ISO 489
Haze		ISO 15072
	89.0 %	
	89.0 %	
	88.0 %	

157.5 mil

87.0 %

Processing Information

Injection	Nominal Value	Unit
Drying Temperature - Dry Air Dryer	248	°F
Drying Time - Dry Air Dryer	2.0 to 3.0	hr
Suggested Max Moisture	< 0.020	%
Suggested Shot Size	30 to 70	%
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%
Peripheral Screw Speed: 0.05 - 0.2 m/s
Standard Melt Temperature: 300°C

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 mm

⁷ 10°C/min

⁸ Across Flow

⁹ Procedure A

¹⁰ US-FMVSS

¹¹ Method A

