

## Makrolon® 8325

Covestro - Polycarbonates - *Polycarbonate*

### General Information

#### Product Description

MVR (300°C/1.2 kg) 4.0 cm<sup>3</sup>/10 min; 20 % glass fiber reinforced; high viscosity; easy release; injection molding - melt temperature 310 - 330°C; extrusion; available in opaque colors only

#### General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe • North America • Asia Pacific • Latin America
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight
Features	• Good Mold Release • High Viscosity
RoHS Compliance	• RoHS Compliant
Appearance	• Colors Available • Opaque
Processing Method	• Extrusion • Injection Molding
ISO Designation	• ISO 7391-PC,MR,(,)-05-5,GF20

### Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.34	g/cm <sup>3</sup>	ISO 1183
Apparent (Bulk) Density <sup>2</sup>	0.64	g/cm <sup>3</sup>	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	5.0	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	4.0	cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.30 to 0.50	%	ISO 2577
Flow	0.30 to 0.50	%	ISO 2577
Across Flow : 536°F, 0.0787 in <sup>3</sup>	0.45	%	ISO 294-4
Flow : 0.0787 in <sup>3</sup>	0.35	%	ISO 294-4
Water Absorption (Saturation, 73°F)	0.24	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.10	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	841000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	14400	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	12300	psi	ISO 527-2/5
Tensile Strain (Yield, 73°F)	3.3	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	4.4	%	ISO 527-2/5
Flexural Modulus <sup>4</sup> (73°F)	769000	psi	ISO 178
Flexural Stress <sup>4</sup>			ISO 178
73°F	21800	psi	
3.5% Strain, 73°F	21000	psi	
Flexural Strain at Flexural Strength <sup>5</sup> (73°F)	4.5	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength <sup>6</sup> (73°F, Complete Break)	4.8	ft·lb/in <sup>2</sup>	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-76°F, Complete Break	31	ft·lb/in <sup>2</sup>	
-22°F, Complete Break	31	ft·lb/in <sup>2</sup>	
73°F, Complete Break	29	ft·lb/in <sup>2</sup>	
Notched Izod Impact Strength <sup>6</sup> (73°F, Complete Break)	4.8	ft·lb/in <sup>2</sup>	ISO 180/A
Multi-Axial Instrumented Impact Energy			ISO 6603-2



-22°F	3.69 ft·lb	
73°F	3.69 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	225 lbf	
73°F	225 lbf	
<b>Hardness</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Ball Indentation Hardness	20900 psi	ISO 2039-1
<b>Thermal</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load (66 psi, Unannealed)	293 °F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	288 °F	ISO 75-2/A
Vicat Softening Temperature		
--	302 °F	ISO 306/B120
--	300 °F	ISO 306/B50
CLTE - Flow (73 to 131°F)	1.7E-5 in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	3.6E-5 in/in/°F	ISO 11359-2
Thermal Conductivity <sup>7</sup> (73°F)	1.6 Btu·in/hr/ft <sup>2</sup> /°F	ISO 8302
RTI Elec (0.06 in)	176 °F	UL 746B
RTI Imp (0.06 in)	176 °F	UL 746B
RTI Str (0.06 in)	176 °F	UL 746B
<b>Electrical</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
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)	910 V/mil	IEC 60243-1
Relative Permittivity		IEC 60250
73°F, 100 Hz	3.30	
73°F, 1 MHz	3.30	
Dissipation Factor		IEC 60250
73°F, 100 Hz	1.0E-3	
73°F, 1 MHz	9.0E-3	
Comparative Tracking Index		IEC 60112
Solution A	175 V	
Solution B	125 V	
<b>Flammability</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Flame Rating		UL 94
0.06 in	V-2	
0.12 in	V-0	
Oxygen Index <sup>8</sup>	32 %	ISO 4589-2
Flash Ignition Temperature	878 °F	ASTM D1929
Self Ignition Temperature	1022 °F	ASTM D1929

### Processing Information

	Nominal Value Unit
<b>Injection</b>	
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

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

