

## Makrolon® AX2675 ST

Covestro - Polycarbonates - *Polycarbonate*

### General Information

#### Product Description

Automotive eXterior grade with specified Sensor signal Transparency; MVR (300 °C/1.2 kg) 12 cm<sup>3</sup>/10 min; medium viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in black colors only; developed for high-gloss surfaces with highest requirements; for the use in combination with hard coatings; for high transmittance applications in the near-infrared range (NIR)

#### General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Features	• Good Mold Release	• High Gloss	• Medium Viscosity
Uses	• Automotive Applications	• Automotive Exterior Parts	• Automotive Exterior Trim
RoHS Compliance	• RoHS Compliant		
Appearance	• Black	• Colors Available	
Processing Method	• Injection Molding		
ISO Designation	• PC		

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

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm <sup>3</sup>	ISO 1183
Apparent (Bulk) Density <sup>2</sup>	0.66	g/cm <sup>3</sup>	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	cm <sup>3</sup> /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 <sup>3</sup>	0.75	%	ISO 294-4
Flow : 0.0787 in <sup>3</sup>	0.70	%	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)	9430	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	10000	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.0	%	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 <sup>4</sup> (73°F)	348000	psi	ISO 178
Flexural Stress <sup>4</sup>			ISO 178
73°F	14200	psi	
3.5% Strain, 73°F	10700	psi	
Flexural Strain at Flexural Strength <sup>5</sup> (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 in <sup>2</sup> /24 hr	ISO 15106-1
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength <sup>6</sup>			ISO 179/1eA
-22°F, Complete Break	7.6	ft-lb/in <sup>2</sup>	
73°F, Partial Break	33	ft-lb/in <sup>2</sup>	



Charpy Unnotched Impact Strength		ISO 179/1eU
-76°F	No Break	
-22°F	No Break	
73°F	No Break	
Notched Izod Impact Strength <sup>6</sup>		ISO 180/A
-22°F, Complete Break	6.7 ft·lb/in <sup>2</sup>	
73°F, Partial Break	33 ft·lb/in <sup>2</sup>	
Multi-Axial Instrumented Impact Energy		ISO 6603-2
-22°F	44.3 ft·lb	
73°F	40.6 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	1370 lbf	
73°F	1170 lbf	
<b>Hardness</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Ball Indentation Hardness	16700 psi	ISO 2039-1
<b>Thermal</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
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 <sup>7</sup>	289 °F	ISO 11357-2
Vicat Softening Temperature		
--	291 °F	ISO 306/B120
--	289 °F	ISO 306/B50
Ball Pressure Test (275°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 <sup>8</sup> (73°F)	1.4 Btu·in/hr/ft <sup>2</sup> /°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
<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)	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	5.0E-4	
73°F, 1 MHz	9.0E-3	
Comparative Tracking Index		IEC 60112
Solution A	250 V	
Solution B	125 V	
Electrolytic Corrosion (73°F)	A1	IEC 60426
<b>Flammability</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Application of Flame from Small Burner <sup>9</sup> (78.7 mil)	K1, F1	DIN 53438-1, -3
Burning Rate <sup>10</sup> (> 39.4 mil)	passed	ISO 3795
Flash Ignition Temperature	896 °F	ASTM D1929
Self Ignition Temperature	1022 °F	ASTM D1929
<b>Optical</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Light Transmittance (78.74 mil)	89.0 %	ISO 13468-2

### Processing Information

<b>Injection</b>	<b>Nominal Value Unit</b>
Drying Temperature - Dry Air Dryer	248 °F
Drying Time - Dry Air Dryer	4.0 hr
Suggested Max Moisture	< 0.020 %
Suggested Shot Size	30 to 70 %
Temperature	482 to 51
Temperature	518 to 55
Temperature	545 to 58
Temperature	518 to 58

Processing (Melt) Temp	536 to 608 °F
Mold Temperature	158 to 230 °F
Back Pressure	725 to 2180 psi
Vent Depth	9.8E-4 to 3.0E-3 in

#### Injection Notes

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

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Pellets

<sup>3</sup> 60x60x2mm, 500 bar

<sup>4</sup> 0.079 in/min

<sup>5</sup> 2.0 mm/min

<sup>6</sup> 3.0 mm

<sup>7</sup> 10°C/min

<sup>8</sup> Across Flow

<sup>9</sup> Method K and F

<sup>10</sup> US-FMVSS

