

Makrolon® Ai2695 ST

 Covestro - Polycarbonates - *Polycarbonate*
General Information
Product Description

Automotive interior grade with specified Sensor signal Transparency; MVR (300 °C/1.2 kg) 12 cm³/10 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 • Asia Pacific	• Europe • Latin America	• North America
Features	• Good Mold Release	• High Gloss	• Medium Viscosity
Uses	• Automotive Applications	• Automotive Interior Parts	• Transmission Applications
Appearance	• Black • Colors Available		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm ³	ISO 1183
Apparent (Bulk) Density	0.66	g/cm ³	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 ³ /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.60 to 0.80	%	ISO 2577
Flow	0.60 to 0.80	%	ISO 2577
Across Flow : 0.0787 in ²	0.75	%	ISO 294-4
Flow : 0.0787 in ²	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 ³ (73°F)	348000	psi	ISO 178
Flexural Stress ³			ISO 178
73°F	14200	psi	
3.5% Strain, 73°F	10700	psi	
Flexural Strain at Flexural Strength ⁴ (73°F)	7.1	%	ISO 178
Films	Nominal Value	Unit	Test Method
Water Vapor Transmission Rate ⁵ (73°F, 3.9 mil)	0.97	g/100 in ² /24 hr	ISO 15106-1
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F, Complete Break	7.6	ft·lb/in ²	
73°F, Partial Break	33	ft·lb/in ²	
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	6.7 ft·lb/in ²	
73°F, Partial Break	33 ft·lb/in ²	
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	
Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness	16700 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)	255 °F	ISO 75-2/A
Glass Transition Temperature ⁷	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 (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	1.0E+16 ohms·cm	IEC 60093
Electric Strength (0.0394 in)	860 V/mil	IEC 60243-1
Relative Permittivity		IEC 60250
100 Hz	3.10	
1 MHz	3.00	
Dissipation Factor		IEC 60250
100 Hz	5.0E-4	
1 MHz	9.0E-3	
Comparative Tracking Index		IEC 60112
Solution A	250 V	
Solution B	125 V	
Electrolytic Corrosion	A1	IEC 60426
Flammability	Nominal Value Unit	Test Method
Glow Wire Flammability Index		IEC 60695-2-12
0.030 in	1560 °F	
0.06 in	1560 °F	
0.12 in	1710 °F	
Glow Wire Ignition Temperature		IEC 60695-2-13
0.030 in	1610 °F	
0.06 in	1610 °F	
0.12 in	1610 °F	
Application of Flame from Small Burner (78.7 mil)	K1, F1	DIN 53438-1, -3
Burning Rate (> 39.4 mil)	passed	ISO 3795
Flash Ignition Temperature	896 °F	ASTM D1929
Needle Flame Test		
59.1 mil ⁸	5 sec	
59.1 mil ⁹	60 sec	
78.7 mil ⁸	5 sec	
	60 sec	
	10 sec	
	120 sec	
Temperature	1022 °F	AST

Optical	Nominal Value	Unit	Test Method
Light Transmittance (78.74 mil)	89.0	%	ISO 13468-2

Processing Information

Injection	Nominal Value	Unit
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	%
Rear Temperature	482 to 518	°F
Middle Temperature	518 to 554	°F
Front Temperature	545 to 581	°F
Nozzle Temperature	518 to 581	°F
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

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 60x60x2mm, 500 bar
- ³ 0.079 in/min
- ⁴ 2.0 mm/min
- ⁵ 85% RH
- ⁶ 3 mm
- ⁷ 10°C/min
- ⁸ Method K
- ⁹ Method F

