

## Covestro Makrolon® AL 2647 Polycarbonate, Automotive Lens Injection Grade

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Optical Grade

### Material Notes:

Easy flowing injection molding grade, UV-stabilized, easy mold release agent. Applications: Automotive lens applications, fulfills U.S. specification SAE J 576C. Information provided by Bayer. As of 1 September 2015, Bayer MaterialScience was separated from Bayer AG and officially adopted its new name – Covestro.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Covestro-Makrolon-AL-2647-Polycarbonate-Automotive-Lens-Injection-Grade.php](http://www.lookpolymers.com/polymer_Covestro-Makrolon-AL-2647-Polycarbonate-Automotive-Lens-Injection-Grade.php)

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in <sup>3</sup>	
Water Absorption	0.35 %	0.35 %	Saturation in water
Moisture Absorption at Equilibrium	0.15 %	0.15 %	Equilibrium at 50% RH
Water Absorption at Saturation	0.35 %	0.35 %	
Linear Mold Shrinkage	0.0040 - 0.0060 cm/cm	0.0040 - 0.0060 in/in	ASTM D955
Melt Flow	11 g/10 min @Load 1.20 kg, Temperature 300 °C	11 g/10 min @Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	75	75	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength, Ultimate	72.0 MPa	10400 psi	ASTM D638
Tensile Strength, Yield	63.0 MPa	9140 psi	
Elongation at Break	110 %	110 %	ASTM D638
Elongation at Yield	6.0 %	6.0 %	
Tensile Modulus	2.40 GPa	348 ksi	
Flexural Yield Strength	86.0 MPa	12500 psi	at 5% strain; ASTM D790
Flexural Modulus	2.30 GPa	334 ksi	ASTM D790
Izod Impact, Notched	8.00 J/cm @Thickness 3.20 mm	15.0 ft-lb/in @Thickness 0.126 in	ASTM D256
Charpy Impact Unnotched	NB	NB	

Mechanical Properties	Metric	English	Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
Specific Heat Capacity	1.17 J/g- $^\circ\text{C}$	0.280 BTU/lb- $^\circ\text{F}$	ASTM D2766
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	136 $^\circ\text{C}$	277 $^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	129 $^\circ\text{C}$	264 $^\circ\text{F}$	
Vicat Softening Point	143 $^\circ\text{C}$	289 $^\circ\text{F}$	
Glass Transition Temp, Tg	148 $^\circ\text{C}$	298 $^\circ\text{F}$	
UL RTI, Electrical	125 $^\circ\text{C}$	257 $^\circ\text{F}$	
UL RTI, Mechanical with Impact	115 $^\circ\text{C}$	239 $^\circ\text{F}$	
UL RTI, Mechanical without Impact	125 $^\circ\text{C}$	257 $^\circ\text{F}$	
Flammability, UL94	V-2	V-2	
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Oxygen Index	26 %	26 %	

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	
Haze	1.0 %	1.0 %	ASTM D1003
	@Thickness 3.20 mm	@Thickness 0.126 in	
Transmission, Visible	89 %	89 %	ISO 489-A
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00\text{e}+15$ ohm-cm	$\geq 1.00\text{e}+15$ ohm-cm	
Surface Resistance	$1.00\text{e}+15$ ohm	$1.00\text{e}+15$ ohm	
	2.9	2.9	

Dielectric Constant Electrical Properties	Metric @Frequency 1e+6 Hz	English @Frequency 1e+6 Hz	Comments
	3.0	3.0	
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	
Dissipation Factor	0.0010	0.0010	
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.010	0.010	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Comparative Tracking Index	275 V	275 V	

Processing Properties	Metric	English	Comments
Melt Temperature	290 - 305 °C	554 - 581 °F	

## Contact Songhan Plastic Technology Co.,Ltd.

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