

Makrolon® TC621

 Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

polycarbonate; flame retardant; high thermal conductivity; light components; LED heat sinks (metal replacement); components for heat dissipation

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Additive	• Flame Retardant
Features	• Flame Retardant • Thermally Conductive
Uses	• Electrical/Electronic Applications • Lighting Applications
Processing Method	• Injection Molding
ISO Designation	• PC-CD35 FR(40)

 Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.42	g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow : 0.0787 in	0.050 to 0.15	%	
Flow : 0.0787 in	0.050 to 0.15	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	1.23E+6	psi	ISO 527-1/1
Tensile Stress (Break, 73°F)	5800	psi	ISO 527-2/5
Tensile Strain (Break, 73°F)	1.0	%	ISO 527-2/5
Flexural Modulus ² (73°F)	1.31E+6	psi	ISO 178
Flexural Stress ² (73°F)	8990	psi	ISO 178
Flexural Strain at Flexural Strength ³ (73°F)	1.0	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength (73°F)	1.9	ft·lb/in ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	266	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	257	°F	ISO 75-2/A
Vicat Softening Temperature	266	°F	ISO 306/B50
CLTE - Flow (73 to 131°F)	1.4E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	2.2E-5	in/in/°F	ISO 11359-2
Thermal Conductivity			ASTM E1461
73°F ⁴	9.0	Btu·in/hr/ft ² /°F	
73°F ⁵	110	Btu·in/hr/ft ² /°F	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (73°F)	1.0E+2	ohms·cm	IEC 60093
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.08 in)	V-0		UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.06 in	1760	°F	
0.12 in	1760	°F	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.06 in	1610	°F	



0.12 in	1710 °F	
Fill Analysis	Nominal Value	Unit
Melt Viscosity ⁶		ISO 11443-A
536°F	200 Pa·s	
572°F	120 Pa·s	

Processing Information

	Nominal Value	Unit
Injection		
Drying Temperature - Dry Air Dryer	230	°F
Drying Time - Dry Air Dryer	4.0	hr
Suggested Max Moisture	< 0.20	%
Rear Temperature	518 to 554	°F
Middle Temperature	536 to 572	°F
Front Temperature	554 to 590	°F
Nozzle Temperature	572 to 608	°F
Processing (Melt) Temp	572 to 608	°F
Mold Temperature	176 to 194	°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%
Shot-to-Cylinder Size: 30-70%

Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² 0.079 in/min
- ³ 2.0 mm/min
- ⁴ in-plane
- ⁵ through-plane
- ⁶ 1000s-1

