Makroblend® EL703

Polycarbonate + PET

Covestro - Polycarbonates

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Technical Data

Product Description

(PC+PET) blend; unreinforced; flame-retardant; UV-stabilized; impact modified; high flow; injection molding grade. Good impact strength, dimensional stability and chemical resistance. Uses include outdoor electrical enclosures. UL746C f1 rated.

General

Material Status	• Commercial: Active		
Literature [1]	• Technical Datasheet (English)		
UL Yellow Card [2]	• E41613-101010260		
Search for UL Yellow Card	• Covestro - Polycarbonates • Makroblend®		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Flame Retardant	• Impact Modifier	• UV Stabilizer
Features	• Chemical Resistant • Flame Retardant • Good Dimensional Stability	• Good Impact Resistance • High Flow • Impact Modified	• UV Stabilized
Uses	• Electrical/Electronic Applications		
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.30	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (270°C/5.0 kg)	26	cm³/10min	ISO 1133
Molding Shrinkage [4]			ISO 2577
Across Flow	0.60 to 0.80	%	
Flow	0.60 to 0.80	%	
Water Absorption			ISO 62
Saturation, 23°C	0.50	%	
Equilibrium, 23°C, 50% RH	0.20	%	

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2300	MPa	ISO 527-1/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	56.0	MPa	
Break, 23°C	55.0	MPa	
Tensile Strain (Yield, 23°C)	4.5	%	ISO 527-2/50
Nominal Tensile Strain at Break (23°C)	100	%	ISO 527-2/50
Flexural Modulus [5] (23°C)	2250	MPa	ISO 178
Flexural Stress [5]			ISO 178
3.5% Strain, 23°C	71.0	MPa	
23°C	83.0	MPa	

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	15	kJ/m²	
23°C	50	kJ/m²	
Notched Izod Impact Strength			ISO 180/A
-30°C	15	kJ/m²	
23°C	50	kJ/m²	

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	119	°C	ISO 75-2/B
1.8 MPa, Unannealed	96.0	°C	ISO 75-2/A
Vicat Softening Temperature	132	°C	ISO 306/B120
CLTE			ISO 11359-2
Flow : 23 to 55°C	7.0E-5	cm/cm/°C	
Transverse : 23 to 55°C	8.0E-5	cm/cm/°C	
Thermal Conductivity [6] (23°C)	0.20	W/m/K	ISO 8302
RTI Elec (1.5 mm)	105	°C	UL 746B
RTI Imp (1.5 mm)	90.0	°C	UL 746B
RTI Str (1.5 mm)	105	°C	UL 746B

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Electric Strength (23°C, 1.00 mm)	34	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
23°C, 100 Hz	3.50		
23°C, 1 MHz	3.30		
Dissipation Factor			IEC 60250
23°C, 100 Hz	3.0E-3		
23°C, 1 MHz	0.020		
Comparative Tracking Index (Solution A)	200	V	IEC 60112

Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.5 mm	V-0		
3.0 mm	• V-0 • 5VA		

Injection	Nominal Value	Unit
Drying Temperature - Dry Air Dryer	110	°C
Drying Time - Dry Air Dryer	2.0 to 4.0	hr
Suggested Max Moisture	< 0.010	%
Suggested Shot Size	30 to 70	%
Rear Temperature	245 to 255	°C
Middle Temperature	250 to 260	°C
Front Temperature	255 to 265	°C
Nozzle Temperature	255 to 270	°C
Processing (Melt) Temp	260 to 280	°C
Mold Temperature	50 to 100	°C

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Injection	Nominal Value	Unit
Back Pressure	5.00 to 15.0	MPa
Vent Depth	0.025 to 0.075	mm

Injection Notes

Hold Pressure (% of Injection Pressure): 50 - 75%
Peripheral Screw Speed: 0.05 - 0.2 m/s
Standard Melt Temperature: 270°C

Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[3] Typical properties: these are not to be construed as specifications.

[4] 600 bar

[5] 2.0 mm/min

[6] Across Flow

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