Makroblend® UT235 M RE

Covestro - Polycarbonates - *Polycarbonate + PET*

General Information

Product Description

(PC+PET)-blend, 15% mineral filled, easy flow, low coefficient of linear thermal expansion, easy release, injection molding. Molded parts from UT235M having exceptional dimensional stability.

Partially bio-circular grade / Attributed via mass balance (according to ISCC PLUS Standard).

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Mineral, 15% Filler by Weight		
Features	• Good Dimensional Stability • Good Flow	• Good Mold Release • Low CLTE	
Agency Ratings	• ISCC PLUS		
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		
ISO Designation	• PC+PET-TD15		

Properties [1]

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.34	g/cm³	ISO 1183
Apparent (Bulk) Density	0.75	g/cm³	ISO 60
Melt Volume-Flow Rate (MVR) (270°C/5.0 kg)	43	cm³/10min	ISO 1133
Molding Shrinkage [2]			ISO 2577
Across Flow : 518°F, 0.118 in	0.50 to 0.60	%	
Flow : 518°F, 0.118 in	0.50 to 0.60	%	
Water Absorption (Saturation, 73°F)	0.40	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.20	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (73°F)	653000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	9860	psi	ISO 527-2/5
Tensile Stress (Break, 73°F)	9720	psi	ISO 527-2/5
Tensile Strain (Yield, 73°F)	3.5	%	ISO 527-2/5
Tensile Strain (Break, 73°F)	4.0	%	ISO 527-2/5
Flexural Modulus [3] (73°F)	674000	psi	ISO 178
Flexural Stress [3]			ISO 178
3.5% Strain, 73°F	16000	psi	
73°F	16700	psi	
Flexural Strain at Flexural Strength [4] (73°F)	5.0	%	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	40	ft·lb/in²	
73°F	40	ft·lb/in²	
Unnotched Izod Impact Strength			ISO 180
-22°F	36	ft·lb/in²	
73°F	36	ft·lb/in²	
Multi-Axial Instrumented Impact Energy (73°F)	26.6	ft·lb	ISO 6603-2

Multi-Axial Instrumented Impact Peak Force (73°F)	1010	lbf	ISO 6603-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	262	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	237	°F	ISO 75-2/A
Vicat Softening Temperature	282	°F	ISO 306/B120
CLTE - Flow			ISO 11359-2
73 to 131°F	2.5E-5	in/in/°F	
73 to 185°F	2.5E-5	in/in/°F	
CLTE - Transverse			ISO 11359-2
73 to 131°F	2.5E-5	in/in/°F	
73 to 185°F	2.7E-5	in/in/°F	

Processing Information

Injection	**Nominal Value**	**Unit**
Drying Temperature - Dry Air Dryer	230	°F
Drying Time - Dry Air Dryer	2.0 to 4.0	hr
Suggested Max Moisture	< 0.010	%
Suggested Shot Size	30 to 70	%
Rear Temperature	428 to 446	°F
Middle Temperature	464 to 482	°F
Front Temperature	500 to 518	°F
Nozzle Temperature	518 to 536	°F
Processing (Melt) Temp	500 to 536	°F
Mold Temperature	158 to 176	°F
Back Pressure	725 to 1450	psi
Vent Depth	9.8E-4 to 3.0E-3	in

Injection Notes

Peripheral Screw Speed: 0.1-0.2 m/s
Hold Pressure (% of Injection Pressure): 50 - 75%
Standard Melt Temperature: 270°C

Notes

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

[2] 150x105x3mm, MT 70°C, 600 bar

[3] 0.079 in/min

[4] 2.0 mm/min