

## Makroblend® UT235 M

Covestro - Polycarbonates - *Polycarbonate + PET*

### General Information

#### Product Description

(PC+PET) blend; 15 % mineral filled; easy flowing; low coefficient of linear thermal expansion; easy release; molded parts from Makroblend® UT235 M having exceptional dimensional stability

#### General

Material Status	• Commercial: Active
Availability	• Africa & Middle East      • Europe • Asia Pacific                      • Latin America                      • North America
Filler / Reinforcement	• Mineral, 15% Filler by Weight
Resin ID (ISO 1043)	• PC+PET-TD15

### Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density	1.34	g/cm <sup>3</sup>	ISO 1183
Apparent (Bulk) Density	0.75	g/cm <sup>3</sup>	ISO 60
Melt Volume-Flow Rate (MVR) (270°C/5.0 kg)	43	cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage <sup>2</sup>			ISO 2577
Across Flow : 0.118 in	0.50 to 0.60	%	
Flow : 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	653000	psi	ISO 527-1/1
Tensile Stress (Yield)	9860	psi	ISO 527-2/5
Tensile Stress (Break)	9720	psi	ISO 527-2/5
Tensile Strain (Yield)	3.5	%	ISO 527-2/5
Tensile Strain (Break)	4.0	%	ISO 527-2/5
Flexural Modulus <sup>3</sup>	674000	psi	ISO 178
Flexural Stress <sup>3</sup>			ISO 178
3.5% Strain	16000	psi	
--	16700	psi	
Flexural Strain at Flexural Strength <sup>4</sup>	5.0	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	40	ft·lb/in <sup>2</sup>	
73°F	40	ft·lb/in <sup>2</sup>	
Unnotched Izod Impact Strength			ISO 180
-22°F	36	ft·lb/in <sup>2</sup>	
73°F	36	ft·lb/in <sup>2</sup>	
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	
<b>Additional Information</b>	<b>Nominal Value Unit</b>	<b>Test Method</b>
Filler Content	15 %	ISO 3451-1A
Test Specimen Production		ISO 294
Inj. Molding - Injection Velocity	472 in/min	
Inj. Molding - Melt Temperature	518 °F	
Inj. Molding - Mold Temperature	158 °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
Melt Temperature (Optimum)	518 °F
Mold Temperature	158 to 176 °F
Back Pressure	725 to 1450 psi
Vent Depth	9.8E-4 to 3.0E-3 in
Holding Pressure - % of Inj. Pressure	50 to 75 %
Peripheral Screw Speed	4 to 8 in/sec

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 150×105×3 mm; 270°C; MT 70°C; 600 bar

<sup>3</sup> 0.079 in/min

<sup>4</sup> 2.0 mm/min

