



Makroblend® UT235 M RE

Partially bio-circular grade / Attributed via mass balance (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.
(according to ISCC PLUS Standard). For specific content see sustainability declaration.

ISO Shortname PC+PET-TD15

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
Melt volume-flow rate	270 °C/ 5 kg	cm ³ /10 min	ISO 1133	43
Molding shrinkage, parallel	150x105x3 mm/ 270 °C / MT 70°C/ 600 bar	%	b.o. ISO 2577	0.5 - 0.6
Molding shrinkage, normal	150x105x3 mm/ 270 °C / MT 70°C/ 600 bar	%	b.o. ISO 2577	0.5 - 0.6
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	4500
Yield stress	5 mm/min	MPa	ISO 527-1,-2	68
Yield strain	5 mm/min	%	ISO 527-1,-2	3.5
C Stress at break	5 mm/min	MPa	ISO 527-1,-2	67
C Strain at break	5 mm/min	%	ISO 527-1,-2	4.0
Flexural modulus	2 mm/min	MPa	ISO 178	4650
Flexural strain at flexural strength	2 mm/min	%	ISO 178	5.0
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	110
Flexural strength	2 mm/min	MPa	ISO 178	115
C Charpy impact strength	23 °C	kJ/m ²	ISO 179/1eU	85
C Charpy impact strength	-30 °C	kJ/m ²	ISO 179/1eU	85
C Puncture impact properties - maximum force	23 °C	N	ISO 6603-2	4500
C Puncture energy	23 °C	J	ISO 6603-2	36
Izod impact strength	23 °C	kJ/m ²	ISO 180/U	75
Izod impact strength	-30 °C	kJ/m ²	ISO 180/U	75
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	114
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	128
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	139
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.45
C Coefficient of linear thermal expansion, normal	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.45
Coefficient of linear thermal expansion, parallel	23 to 85 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.45
Coefficient of linear thermal expansion, normal	23 to 85 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.48
Other properties (23 °C)				
C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.4
C Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.2
C Density		kg/m ³	ISO 1183-1	1340
Bulk density		g/cm ³	ISO 60	0.75
Filler content	Method A	%	b.o. ISO 3451-1	15
Processing conditions for test specimens				
C Injection molding - Melt temperature		°C	ISO 294	270
C Injection molding - Mold temperature		°C	ISO 294	70
C Injection molding - Injection velocity		mm/s	ISO 294	200





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Property	Test Condition	Unit	Standard	typical Value
Recommended processing and drying conditions				
Melt temperatures		°C	-	260 - 280
Standard Melt temperature		°C	-	270
Barrel Temperatures - Rear		°C	-	220 - 230
Barrel Temperatures - Middle		°C	-	240 - 250
Barrel Temperatures - Front		°C	-	260 - 270
Barrel Temperatures - Nozzle		°C	-	270 - 280
Mold Temperatures		°C	-	70-80
Hold Pressure (% of injection pressure)		%	-	50 - 75
Plastic Back Pressure (specific)		bar	-	50 - 100
Peripheral Screw Speed		m/s	-	0.1 - 0.2
Shot-to-Cylinder Size		%	-	30 - 70
Dry Air Drying Temperature		°C	-	110
Dry Air Drying Time		h	-	2-4
Moisture Content max. (%)		%	-	<= 0,01
Vent Depth		mm	-	0.025 - 0.075

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

Impact properties: N = non-break, P = partial break, C = complete break

