

Makroblend® UT4045 G

/ (PC+PBT)-blend, 20% Glass fiber reinforced, easy release, injection molding. Makroblend UT4045G offers a high stiffness, excellent chemical resistance, good flowability and exceptional dimensional stability.

ISO Shortname PC+PBT-GF20

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	260 °C/ 5 kg	cm ³ /10 min	ISO 1133	30
Molding shrinkage, parallel	150x105x3 mm/ 260 °C / MT 80 °C/ 600 bar	%	b.o. ISO 2577	0.2 - 0.4
Molding shrinkage, normal	150x105x3 mm/ 260 °C / MT 80 °C/ 600 bar	%	b.o. ISO 2577	0.5 - 0.7
Molding shrinkage, parallel/normal	Value range based on general practical experience (600bar)	%	b.o. ISO 2577	0.2 - 0.6
Post- shrinkage, parallel/normal	Value range based on general practical experience (1h; 90°C)	%	b.o. ISO 2577	<0.1

Mechanical properties (23 °C/50 % r. h.)

C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	6500
Yield stress	5 mm/min	MPa	ISO 527-1,-2	100
Yield strain	5 mm/min	%	ISO 527-1,-2	3
Nominal strain at break	5 mm/min	%	ISO 527-1,-2	3
C Stress at break	5 mm/min	MPa	ISO 527-1,-2	100
C Strain at break	5 mm/min	%	ISO 527-1,-2	3
Flexural modulus	2 mm/min	MPa	ISO 178	6100
Flexural strain at flexural strength	2 mm/min	%	ISO 178	3
Flexural strength	2 mm/min	MPa	ISO 178	160
C Charpy impact strength	23 °C	kJ/m ²	ISO 179-1eU	45
C Charpy impact strength	-30 °C	kJ/m ²	ISO 179-1eU	40
Izod impact strength	23 °C	kJ/m ²	ISO 180-U	40
Izod impact strength	-30 °C	kJ/m ²	ISO 180-U	35
Izod notched impact strength	23 °C	kJ/m ²	ISO 180-A	6
Izod notched impact strength	-30 °C	kJ/m ²	ISO 180-A	6
Ball indentation hardness		N/mm ²	ISO 2039-1	90

Thermal properties

C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	110
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	130
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	140
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.7
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.35

Electrical properties (23 °C/50 % r. h.)

C Relative permittivity	100 Hz	-	IEC 60250	3.6
C Relative permittivity	1 MHz	-	IEC 60250	3.4
C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	13
C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	144
C Volume resistivity		Ohm·m	IEC 60093	>1E15
C Surface resistivity		Ohm	IEC 60093	>1E17
C Electrical strength	1 mm	kV/mm	IEC 60243-1	33
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	175

Other properties (23 °C)

C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.3
C Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.15
C Density		kg/m ³	ISO 1183-1	1400
Filler content	Method A	%	b.o. ISO 3451-1	20

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Property	Test Condition	Unit	Standard	typical Value
Processing conditions for test specimens				
C Injection molding-Melt temperature		°C	ISO 294	260
C Injection molding-Mold temperature		°C	ISO 294	70
C Injection molding-Injection velocity		mm/s	ISO 294	200
Recommended Processing and Drying Conditions				
Melt Temperatures		°C	-	260 - 280
Standard Melt Temperature		°C	-	260
Barrel Temperatures - Rear		°C	-	245 - 255
Barrel Temperatures - Middle		°C	-	250 - 260
Barrel Temperatures - Front		°C	-	255 - 265
Barrel Temperatures - Nozzle		°C	-	255 - 270
Mold Temperatures		°C	-	50 - 100
Hold Pressure (% of injection pressure)		%	-	50 - 75
Plastic Back Pressure (specific)		bar	-	50 - 150
Peripheral Screw Speed		m/s	-	0.05 - 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