



Makroblend® UT6005

PC+PBT Blends, elastomer modified / Non reinforced

(PC+PBT)-blend, impact modified, easy release, injection molding grade. Makroblend® UT6005 offers an exceptional low-temperature impact strength, good flowability and excellent chemical resistance.

ISO Shortname

PC+PBT-I

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	260 °C/ 5 kg	cm ³ /10 min	ISO 1133	18
Molding shrinkage, parallel/normal	Value range based on general practical experience (600bar)	%	b.o. ISO 2577	0.7 - 0.9
Post- shrinkage, parallel/normal	Value range based on general practical experience (1h; 90°C)	%	b.o. ISO 2577	0.1 - 0.2
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2200
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	60
C Yield strain	50 mm/min	%	ISO 527-1,-2	5
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
Stress at break	50 mm/min	MPa	ISO 527-1,-2	50
Flexural modulus	2 mm/min	MPa	ISO 178	2150
Flexural strain at flexural strength	2 mm/min	%	ISO 178	6
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	70
Flexural strength	2 mm/min	MPa	ISO 178	80
C Charpy impact strength	23 °C	kJ/m ²	ISO 179-1eU	N
C Charpy impact strength	-30 °C	kJ/m ²	ISO 179-1eU	N
C Charpy notched impact strength	23 °C	kJ/m ²	ISO 179-1eA	60
C Charpy notched impact strength	-30 °C	kJ/m ²	ISO 179-1eA	40
C Puncture maximum force	23 °C	N	ISO 6603-2	3800
C Puncture maximum force	-30 °C	N	ISO 6603-2	5000
C Puncture energy	23 °C	J	ISO 6603-2	47
C Puncture energy	-30 °C	J	ISO 6603-2	58
Izod impact strength	23 °C	kJ/m ²	ISO 180-U	N
Izod impact strength	-30 °C	kJ/m ²	ISO 180-U	N
Izod notched impact strength	23 °C	kJ/m ²	ISO 180-A	50
Izod notched impact strength	-20 °C	kJ/m ²	ISO 180-A	45
Izod notched impact strength	-30 °C	kJ/m ²	ISO 180-A	35
Izod notched impact strength	-40 °C	kJ/m ²	ISO 180-A	20
Ball indentation hardness		N/mm ²	ISO 2039-1	108
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	85
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	110
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	126
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.9
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.9
C Burning behavior UL 94 (1.5 mm)	1.6 mm	Class	UL 94	HB (Bayer)
C Oxygen index	Method A	%	ISO 4589-2	21
Thermal conductivity, cross-flow	23 °C; 50 % r. h.	W/(m·K)	ISO 8302	0.2
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	750



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Property	Test Condition	Unit	Standard	typical Value
Electrical properties (23 °C/50 % r. h.)				
C Relative permittivity	100 Hz	-	IEC 60250	3.2
C Relative permittivity	1 MHz	-	IEC 60250	3.0
C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	7
C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	45
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	30
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	600
C Comparative tracking index CTI M	Solution B	Rating	IEC 60112	125
Other properties (23 °C)				
C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.5
C Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.2
C Density		kg/m³	ISO 1183-1	1200
Bulk density		g/cm³	ISO 60	0.65
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	-	250 - 270
Standard Melt Temperature		°C	-	260
Barrel Temperatures - Rear		°C	-	230 - 240
Barrel Temperatures - Middle		°C	-	240 - 250
Barrel Temperatures - Front		°C	-	250 - 260
Barrel Temperatures - Nozzle		°C	-	260 - 270
Mold Temperatures		°C	-	60 - 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	-	105
Dry Air Drying Time		h	-	2-4
Moisture Content max. (%)		%	-	<= 0,02
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

