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PBT, injection molding grade, non-reinforced, high viscosity, easy release, heat-ageing stabilised, nucleated, short processing cycle

ISO Shortname: ISO 7792-PBT,MHMR,15-030

Property	Test Condition	Unit	Standard	guide value
Rheological properties				
Göttfert melt viscosity	165 1/s; 260 °C	Pa·s	Lanxess-Methode	430
C Melt volume-flow rate	260 °C; 2.16 kg	cm³/(10 min)	ISO 1133	18
Molding shrinkage, parallel	150x105x3; 260 °C / MT 80 °C; 600 bar	%	acc. ISO 2577	1.9
Molding shrinkage, transverse	150x105x3; 260 °C / MT 80 °C; 600 bar	%	acc. ISO 2577	1.9
Post- shrinkage, parallel	150x105x3; 150 °C; 1 h	%	acc. ISO 2577	0.5
Post- shrinkage, transverse	150x105x3; 150 °C; 1 h	%	acc. ISO 2577	0.5
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2600
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	55
C Yield strain	50 mm/min	%	ISO 527-1,-2	8.0
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	>20
C Tensile creep modulus	1 h	MPa	ISO 899-1	2200
C Tensile creep modulus	1000 h	MPa	ISO 899-1	1300
C Charpy impact strength	23 °C	kJ/m²	ISO 179-1eU	N
C Charpy impact strength	-30 °C	kJ/m²	ISO 179-1eU	180
C Charpy notched impact strength	23 °C	kJ/m²	ISO 179-1eA	< 10
C Charpy notched impact strength	-30 °C	kJ/m²	ISO 179-1eA	< 10
Izod impact strength	23 °C	kJ/m²	ISO 180-1U	N
Izod impact strength	-30 °C	kJ/m²	ISO 180-1U	150
Izod notched impact strength	23 °C	kJ/m²	ISO 180-1A	< 10
Izod notched impact strength	-30 °C	kJ/m²	ISO 180-1A	< 10
Izod notched impact strength	-40 °C	kJ/m²	ISO 180-1A	< 10
Flexural modulus	2 mm/min	MPa	ISO 178	2200
Flexural strength	2 mm/min	MPa	ISO 178	90
Flexural strain at flexural strength	2 mm/min	%	ISO 178	6.0
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	80
Ball indentation hardness		N/mm²	ISO 2039-1	120
C Puncture energy	23 °C	J	ISO 6603-2	22
C Puncture energy	-30 °C	J	ISO 6603-2	32
C Puncture maximum force	23 °C	N	ISO 6603-2	3650
C Puncture maximum force	-30 °C	N	ISO 6603-2	5191
Thermal properties				
C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	225
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	60
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	160

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Property	Test Condition	Unit	Standard	guide value
C Temperature of deflection under load	8.00 MPa	°C	ISO 75-1,-2	45
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	180
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10^{-4}/K	ISO 11359-1,-2	1.2
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10^{-4}/K	ISO 11359-1,-2	1.2
C Burning behavior UL 94 (1.6 mm)	1.6 mm	Class	UL 94	HB
C Burning behavior UL 94	0.8 mm	Class	UL 94	HB
C Oxygen index	Method A	%	ISO 4589-2	24
Thermal conductivity	23 °C	W/(m·K)	ISO 8302	0.25
Resistance to heat (ball pressure test)		°C	IEC 60695-10-2	190
Temperature index (Tensile strength)	20000 h	°C	IEC 60216-1	150
Halving interval (Tensile strength)		°C	IEC 60216-1	12.6
Relative temperature index (Tensile strength)		°C	UL 746B	140
Temperature index (Tensile impact strength)	20000 h	°C	IEC 60216-1	135
Halving interval (Tensile impact strength)		°C	IEC 60216-1	12
Relative temperature index (Tensile impact strength)		°C	UL 746B	125
Temperature index (Electric strength)	20000 h	°C	IEC 60216-1	150
Halving interval (Electric strength)		°C	IEC 60216-1	12.6
Relative temperature index (Electric strength)		°C	UL 746B	140
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	750
Burning rate (US-FMVSS)		mm/min	ISO 3795	passed
Electrical properties (23 °C/50 % r. h.)				
C Relative permittivity	100 Hz	-	IEC 60250	3.4
C Relative permittivity	1 MHz	-	IEC 60250	3.2
C Electric strength	1 mm	kV/mm	IEC 60243-1	30
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	600
Comparative tracking index CTI M	Solution B	Rating	IEC 60112	425 (375) M
Electrolytic corrosion		Rating	IEC 60426	A 1
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 % RH	%	ISO 62	0.2
C Density		kg/m³	ISO 1183	1300
Bulk density		kg/m³	ISO 60	800
Material specific properties				
C Viscosity number		cm³/g	ISO 1628-5	140
Processing conditions for test specimens				
C Injection molding-Melt temperature		°C	ISO 294	260
C Injection molding-Mold temperature		°C	ISO 294	80
Processing recommendations				
Drying temperature		°C	-	120
Drying time circulating air dryer		h	-	4-8

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Property	Test Condition	Unit	Standard	guide value
Residual moisture content		%	Acc. to Karl Fischer	0-0.02
Melt temperature		°C	-	250-270
Mold temperature		°C	-	80-100

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.

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Disclaimer

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Test values

Unless specified to the contrary, the values given have been established on standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mould/die, the processing conditions and the coloring.

Processing note

Under the recommended processing conditions small quantities of decomposition product may be given off during processing. To preclude any risk to the health and well-being of the machine operatives, tolerance limits for the work environment must be ensured by the provision of efficient exhaust ventilation and fresh air at the workplace in accordance with the Safety Data Sheet. In order to prevent the partial decomposition of the polymer and the generation of volatile decomposition products, the prescribed processing temperatures should not be substantially exceeded. Since excessively high temperatures are generally the result of operator error or defects in the heating system, special care and controls are essential in these areas.

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