

Datasheet

Durethan BC30 000000

PA 6, non-reinforced, injection molding, improved impact strength

ISO Shortname: ISO 16396-PA 6-I,,GR,S14-030

Property	Test Condition	Unit	Standard	guide value ¹	
				d.a.m.	cond.
Rheological properties					
C Melt volume-flow rate	270 °C; 2.16 kg	cm ³ /(10 min)	ISO 1133-1	36	
Molding shrinkage, parallel	150x105x3; 270 °C / WZ 80 °C; 400 bar	%	acc. ISO 294-4	1.05	
Molding shrinkage, transverse	150x105x3; 270 °C / WZ 80 °C; 400 bar	%	acc. ISO 294-4	1.57	
Post- shrinkage, parallel	150x105x3; 120 °C; 4 h	%	acc. ISO 294-4	0.35	
Post- shrinkage, transverse	150x105x3; 120 °C; 4 h	%	acc. ISO 294-4	0.44	
C Molding shrinkage, parallel	60x60x2; 270 °C / WZ 80 °C; 600 bar	%	ISO 294-4	1.65	
C Molding shrinkage, transverse	60x60x2; 270 °C / WZ 80 °C; 600 bar	%	ISO 294-4	1.75	
Post- shrinkage, parallel	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.2	
Post- shrinkage, transverse	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.2	
Mechanical properties (23 °C/50 % r. h.)					
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2800	1200
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	65	40
C Yield strain	50 mm/min	%	ISO 527-1,-2	4.0	20
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 10	> 50
C Charpy impact strength	23 °C	kJ/m ²	ISO 179-1eU	N	N
C Charpy impact strength	-30 °C	kJ/m ²	ISO 179-1eU	N	N
C Charpy notched impact strength	23 °C	kJ/m ²	ISO 179-1eA	10	50
C Charpy notched impact strength	-30 °C	kJ/m ²	ISO 179-1eA	< 10	< 10
Izod impact strength	23 °C	kJ/m ²	ISO 180-1U	N	N
Izod impact strength	-30 °C	kJ/m ²	ISO 180-1U	N	N
Izod notched impact strength	23 °C	kJ/m ²	ISO 180-1A	<10	50
Izod notched impact strength	-30 °C	kJ/m ²	ISO 180-1A	<10	<10
Flexural modulus	2 mm/min	MPa	ISO 178-A	2400	800
Flexural strength	2 mm/min	MPa	ISO 178-A	90	30
Flexural strain at flexural strength	2 mm/min	%	ISO 178-A	7.0	9.0
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178-A	75	20
C Puncture maximum force	23 °C	N	ISO 6603-2	4339	470
C Puncture maximum force	-30 °C	N	ISO 6603-2	5870	940
C Puncture energy	23 °C	J	ISO 6603-2	55	140
C Puncture energy	-30 °C	J	ISO 6603-2	65	20
Ball indentation hardness		N/mm ²	ISO 2039-1	110	45

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Thermal properties					
C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	222	
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	55	
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	145	
C Temperature of deflection under load	8.00 MPa	°C	ISO 75-1,-2	45	
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	180	
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	1.0	
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	1.35	
C Burning behavior UL 94	1.5 mm	Class	UL 94	HB	
C Burning behavior UL 94	0.75 mm	Class	UL 94	HB	
C Oxygen index	Method A	%	ISO 4589-2	22	
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	800	
Burning behavior US-FMVSS302	>=1.0 mm		ISO 3795	passed	
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	180	
Electrical properties (23 °C/50 % r. h.)					
C Relative permittivity	100 Hz	-	IEC 60250	3.7	8.5
C Relative permittivity	1 MHz	-	IEC 60250	3.3	3.8
C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	110	1650
C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	190	660
C Volume resistivity		Ohm·m	IEC 62631-3	1E13	1E11
C Surface resistivity		Ohm	IEC 62631-3	1E15	1E14
C Electric strength	1 mm	kV/mm	IEC 60243-1	35	35
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	600	
Other properties (23 °C)					
C Water absorption (Saturation value)	Water at 23 °C	%	ISO 62	9	
C Water absorption (Equilibrium value)	23 °C; 50 % RH	%	ISO 62	2.7	
C Density		kg/m ³	ISO 1183	1103	
Bulk density		kg/m ³	ISO 60	650	
Processing conditions for test specimens					
C Injection molding-Melt temperature		°C	ISO 294	270	
C Injection molding-Mold temperature		°C	ISO 294	80	
Processing recommendations					
Drying temperature dry air dryer		°C	-	80	
Drying time dry air dryer		h	-	2-6	
Residual moisture content		%	Acc. to Karl Fischer	0.03-0.12	
Melt temperature (Tmin - Tmax)		°C	-	260-280	

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Mold temperature		°C	-	d.a.m. cond. 80-90

Notes

1 Typical properties: these are not to be construed as specifications

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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