

## Durethan BG30XH3.0LT 904040

PA 6, 30 % glass fibers/glass spheres, injection molding, heat-aging stabilized, low tendency to warp, NIR-laser transparent coloring (black)

ISO Shortname: ISO 16396-PA 6,(GB+GF)30,GHR,S14-060

Property	Test Condition	Unit	Standard	guide value <sup>1</sup>	
				d.a.m.	cond.
<b>Rheological properties</b>					
C Molding shrinkage, parallel	60x60x2; 280 °C / MT 80 °C; 600 bar	%	ISO 294-4	0.5	
C Molding shrinkage, transverse	60x60x2; 280 °C / MT 80 °C; 600 bar	%	ISO 294-4	0.8	
Post- shrinkage, parallel	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.2	
Post- shrinkage, transverse	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.3	
<b>Mechanical properties (23 °C/50 % r. h.)</b>					
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	6400	3100
C Tensile Stress at break	5 mm/min	MPa	ISO 527-1,-2	120	65
C Tensile Strain at break	5 mm/min	%	ISO 527-1,-2	4.0	10
C Tensile creep modulus	1 h	MPa	ISO 899-1	2400	
C Tensile creep modulus	1000 h	MPa	ISO 899-1	2000	
C Charpy impact strength	23 °C	kJ/m <sup>2</sup>	ISO 179-1eU	45	75
C Charpy impact strength	-30 °C	kJ/m <sup>2</sup>	ISO 179-1eU	40	45
C Charpy notched impact strength	23 °C	kJ/m <sup>2</sup>	ISO 179-1eA	< 10	10
C Charpy notched impact strength	-30 °C	kJ/m <sup>2</sup>	ISO 179-1eA	< 10	< 10
Charpy notched impact strength	-40 °C	kJ/m <sup>2</sup>	ISO 179-1eA	< 10	< 10
Izod impact strength	23 °C	kJ/m <sup>2</sup>	ISO 180-1U	35	60
Izod impact strength	-30 °C	kJ/m <sup>2</sup>	ISO 180-1U	30	40
Izod notched impact strength	-30 °C	kJ/m <sup>2</sup>	ISO 180-1A	< 10	< 10
Izod notched impact strength	-40 °C	kJ/m <sup>2</sup>	ISO 180-1A	< 10	< 10
Flexural modulus	2 mm/min	MPa	ISO 178-A	5800	2800
Flexural strength	2 mm/min	MPa	ISO 178-A	185	100
Flexural strain at flexural strength	2 mm/min	%	ISO 178-A	5.0	8.0
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178-A	170	80
C Puncture maximum force	23 °C	N	ISO 6603-2	700	
C Puncture maximum force	-30 °C	N	ISO 6603-2	690	
C Puncture energy	23 °C	J	ISO 6603-2	2.0	
C Puncture energy	-30 °C	J	ISO 6603-2	1.7	
Ball indentation hardness		N/mm <sup>2</sup>	ISO 2039-1	185	75
<b>Thermal properties</b>					
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	190	
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	210	
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	> 200	
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 <sup>-4</sup> /K	ISO 11359-1,-2	0.3	
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 <sup>-4</sup> /K	ISO 11359-1,-2	0.9	
C Burning behavior UL 94	1.5 mm	Class	UL 94	HB	
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	650	
Burning behavior US-FMVSS302			ISO 3795	passed	



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Property	Test Condition	Unit	Standard	guide value <sup>1</sup> d.a.m. cond.
<b>Electrical properties (23 °C/50 % r. h.)</b>				
C Relative permittivity	100 Hz	-	IEC 60250	4.5
C Relative permittivity	1 MHz	-	IEC 60250	4.0
C Dissipation factor	100 Hz	10 <sup>-4</sup>	IEC 60250	265
C Dissipation factor	1 MHz	10 <sup>-4</sup>	IEC 60250	220
C Volume resistivity		Ohm·m	IEC 60093	1E13
C Surface resistivity		Ohm	IEC 60093	1E14
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	375
<b>Other properties (23 °C)</b>				
C Water absorption (Saturation value)	Water at 23 °C	%	ISO 62	7
C Water absorption (Equilibrium value)	23 °C; 50 % RH	%	ISO 62	2.2
C Density		kg/m <sup>3</sup>	ISO 1183	1355
Bulk density		kg/m <sup>3</sup>	ISO 60	700
<b>Processing conditions for test specimens</b>				
C Injection molding-Melt temperature		°C	ISO 294	280
C Injection molding-Mold temperature		°C	ISO 294	80
<b>Processing recommendations</b>				
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	-	270-290
Mold temperature		°C	-	80-120

### 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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Property data is provided as general information only. Property values are approximate and are not part of the product specifications.

#### Flammability

Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

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#### Color and Visual Effects

Type and quantity of pigments or additives used to obtain certain colors and special visual effects can affect mechanical properties.

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