

Datasheet

Durethan BKV320ZH2.0 900116

PA 6, 20% glass fibers, blow molding, heat-aging stabilized

ISO Shortname: ISO 16396-PA 6,GF20,BHR,S14-070

Rheological properties € Molding shrinkage, parallel 60x60x2; 280 °C / MT 80 °C ISO 294-4 0.8 C Molding shrinkage, transverse 60x60x2; 280 °C / MT 80 °C ISO 294-4 0.6 Post- shrinkage, parallel 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post- shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Mechanical properties (23 °C/50 % r. h.) Webst- shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Tensile Stress at break 5 mm/min MPa ISO 527-1,-2 6500 3200 CTensile Stress at break 5 mm/min MPa ISO 527-1,-2 120 70 CTensile Strain at break 5 mm/min MPa ISO 527-1,-2 45 13 CCharpy impact strength 23 °C kJ/m² ISO 179-1eU 85 90 CCharpy impact strength -30 °C kJ/m² ISO 179-1eU 85 90 CCharpy impact strength -30 °C kJ/m² ISO 179-1eU 89 70 CCharpy impact strength -30 °C kJ/m² <t< th=""><th>Property</th><th>Test Condition</th><th>Unit</th><th>Standard</th><th colspan="2">guide value ¹</th></t<>	Property	Test Condition	Unit	Standard	guide value ¹	
C Molding shrinkage, transverse 60x60x2; 280 °C / MT 80 % ISO 294-4 0.6 Post-shrinkage, parallel 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post-shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 527-1, 2 120 °C Tensile Strain at Irea 1850 527-1, 2 120 °C Tensile Strain at Irea 1850 179-140 0.1 Post-shrinkage, transverse 60x60x2; 120 °C, 4 J/m² ISO 180-14 10 < 10 Post-shrinkage, transverse 60x60x2; 120 °C, 4 J/m² ISO 180-14 20 35 Tensile Strain at Irea 1850 178-A 550 °C Post-shrinkage, transverse 70x60x2; 120 °C,	Rheological properties					
Post- shrinkage, parallel 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Post- shrinkage, transverse 60x60x2; 120 °C; 4 h % ISO 294-4 0.1 Mechanical properties (23 °C/50 % r. h.) CTensile modulus 1 mm/min MPa ISO 527-1,-2 6500 3200 CTensile Stress at break 5 mm/min MPa ISO 527-1,-2 120 70 CTensile Stress at break 5 mm/min MPa ISO 527-1,-2 120 70 CTensile Stress at break 5 mm/min MPa ISO 527-1,-2 120 70 CTensile Strein at break 5 mm/min % ISO 627-1,-2 120 70 CCharpy impact strength 23 °C kJ/m² ISO 179-1eU 85 90 CCharpy impact strength -30 °C kJ/m² ISO 179-1eU 90 70 CCharpy notched impact strength -30 °C kJ/m² ISO 179-1eU 90 70 CCharpy notched impact strength -30 °C kJ/m² ISO 179-1eA 20 35 CCharpy notched impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 20 35 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 10 <10 Flexural modulus 2 mm/min MPa ISO 178-A 5800 2900 Flexural strength -30 °C kJ/m² ISO 180-1A 10 <10 Flexural strength -30 °C kJ/m² ISO 178-A 5800 2900 Flexural strength -20 mm/min MPa ISO 178-A 5.5 7 Flexural strength -20 mm/min MPa ISO 178-A 5.5 7 Flexural strength -20 mm/min MPa ISO 178-A 5.5 7 Flexural strength -20 mm/min MPa ISO 178-A 5.5 7 Flexural stress at 3.5 % strain 2 mm/min MPa °C ISO 135-1,-2 191 CTemperature of deflection under load 0.45 MPa °C ISO 75-1,-2 191 Vicat softening temperature 10 °C/min °C ISO 1359-1,-2 121 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 CCoefficient of linear thermal expansion, parallel 23 to 55 °C 10 °/K ISO 11359-1,-2 1.5 Other properties (23 °C) CDensity kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700	C Molding shrinkage, parallel	•	%	ISO 294-4	0.8	
Post-shrinkage, transverse	C Molding shrinkage, transverse	· · · · · · · · · · · · · · · · · · ·	%	ISO 294-4	0.6	
Mechanical properties (23 °C/50 % r. h.) CTensile modulus	Post- shrinkage, parallel	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.1	
C Tensile modulus 1 mm/min MPa ISO 527-1,-2 6500 3200 C Tensile Stress at break 5 mm/min MPa ISO 527-1,-2 120 70 C Tensile Strain at break 5 mm/min % ISO 527-1,-2 4.5 13 C Charpy impact strength 23 °C kJ/m² ISO 179-1eU 85 90 C Charpy impact strength -30 °C kJ/m² ISO 179-1eU 90 70 C Charpy notched impact strength -30 °C kJ/m² ISO 179-1eA 20 35 C Charpy notched impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 100 70 Izod inotched impact strength -30 °C kJ/m² ISO 180-1U 100 70 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 20 35 Izod notched impact strength -30 °C	Post- shrinkage, transverse	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.1	
C Tensile Stress at break 5 mm/min MPa ISO 527-1,-2 120 70 C Tensile Strain at break 5 mm/min % ISO 527-1,-2 4.5 13 C Charpy impact strength 23 °C kJ/m² ISO 179-1eU 85 90 C Charpy impact strength -30 °C kJ/m² ISO 179-1eU 90 70 C Charpy notched impact strength -30 °C kJ/m² ISO 179-1eA 20 35 C Charpy notched impact strength -30 °C kJ/m² ISO 179-1eA 10 <10	Mechanical properties (23 °C/50 % r. h.)	,				
C Tensile Strain at break 5 mm/min % ISO 527-1,-2 4.5 13 C Charpy impact strength 23 °C kJ/m² ISO 179-1eU 85 90 C Charpy impact strength -30 °C kJ/m² ISO 179-1eU 90 70 C Charpy notched impact strength 23 °C kJ/m² ISO 179-1eA 20 35 C Charpy notched impact strength 23 °C kJ/m² ISO 179-1eA 10 <10	C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	6500	3200
C Charpy impact strength 23 °C kJ/m² ISO 179-1eU 85 90 C Charpy impact strength -30 °C kJ/m² ISO 179-1eU 90 70 C Charpy notched impact strength 23 °C kJ/m² ISO 179-1eA 20 35 C Charpy notched impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 100 70 Izod notched impact strength -30 °C kJ/m² ISO 180-1U 100 70 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 20 35 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 10 <10	C Tensile Stress at break	5 mm/min	MPa	ISO 527-1,-2	120	70
Charpy impact strength -30 °C kJ/m² ISO 179-1eU 90 70 C Charpy notched impact strength 23 °C kJ/m² ISO 179-1eA 20 35 C Charpy notched impact strength -30 °C kJ/m² ISO 179-1eA 10 <10 Izod impact strength 23 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 100 70 Izod impact strength -30 °C kJ/m² ISO 180-1U 100 70 Izod notched impact strength 23 °C kJ/m² ISO 180-1A 20 35 Izod notched impact strength 23 °C kJ/m² ISO 180-1A 10 <10 Flexural modulus 2 mm/min MPa ISO 178-A 5800 2900 Flexural strength 2 mm/min MPa ISO 178-A 5800 2900 Flexural strength 2 mm/min MPa ISO 178-A 55.5 7 Flexural strength 2 mm/min MPa ISO 178-A 5.5 7 Flexural strength 2 mm/min MPa ISO 178-A 170 75 Thermal properties C Melting temperature 10 °C/min °C ISO 11357-1,-3 221 C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 191 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 °/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 °/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700	CTensile Strain at break	5 mm/min	%	ISO 527-1,-2	4.5	13
C Charpy notched impact strength 23 °C kJ/m² ISO 179-1eA 20 35 C Charpy notched impact strength -30 °C kJ/m² ISO 179-1eA 10 <10 Izod impact strength 23 °C kJ/m² ISO 180-1U 70 110 Izod impact strength -30 °C kJ/m² ISO 180-1U 70 110 Izod impact strength 23 °C kJ/m² ISO 180-1U 100 70 Izod notched impact strength 23 °C kJ/m² ISO 180-1A 20 35 Izod notched impact strength -30 °C kJ/m² ISO 180-1A 10 <10 Flexural modulus 2 mm/min MPa ISO 178-A 5800 2900 Flexural strength 2 mm/min MPa ISO 178-A 190 100 Flexural strength 2 mm/min MPa ISO 178-A 190 100 Flexural strength 2 mm/min MPa ISO 178-A 5.5 7 Flexural stress at 3.5 % strain 2 mm/min MPa ISO 178-A 170 75 Thermal properties C Melting temperature 10 °C/min °C ISO 11357-1,-3 221 C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 191 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 °/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	C Charpy impact strength	23 °C	kJ/m²	ISO 179-1eU	85	90
C Charpy notched impact strength	C Charpy impact strength	-30 °C	kJ/m²	ISO 179-1eU	90	70
Izod impact strength	C Charpy notched impact strength	23 °C	kJ/m²	ISO 179-1eA	20	35
Izod impact strength	C Charpy notched impact strength	-30 °C	kJ/m²	ISO 179-1eA	10	<10
Izod notched impact strength	Izod impact strength	23 °C	kJ/m²	ISO 180-1U	70	110
Izod notched impact strength -30 °C kJ/m² ISO 180-1A 10 <10	Izod impact strength	-30 °C	kJ/m²	ISO 180-1U	100	70
Flexural modulus	Izod notched impact strength	23 °C	kJ/m²	ISO 180-1A	20	35
Flexural strength 2 mm/min MPa ISO 178-A 190 100	Izod notched impact strength	-30 °C	kJ/m²	ISO 180-1A	10	<10
Flexural strain at flexural strength 2 mm/min % ISO 178-A 5.5 7	Flexural modulus	2 mm/min	MPa	ISO 178-A	5800	2900
Flexural stress at 3.5 % strain 2 mm/min MPa ISO 178-A 170 75 Thermal properties C Melting temperature 10 °C/min °C ISO 11357-1,-3 221 C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 191 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 °I/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 °I/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	Flexural strength	2 mm/min	MPa	ISO 178-A	190	100
Thermal properties C Melting temperature 10 °C/min °C ISO 11357-1,-3 221 C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 191 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	Flexural strain at flexural strength	2 mm/min	%	ISO 178-A	5.5	7
C Melting temperature 10 °C/min °C ISO 11357-1,-3 221 C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 191 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178-A	170	75
C Temperature of deflection under load 1.80 MPa °C ISO 75-1,-2 191 C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	Thermal properties					
C Temperature of deflection under load 0.45 MPa °C ISO 75-1,-2 212 Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10⁴/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10⁴/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	221	
Vicat softening temperature 50 N; 120 °C/h °C ISO 306 206 C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 ⁴/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	191	
C Coefficient of linear thermal expansion, parallel 23 to 55 °C 10 ⁻⁴ /K ISO 11359-1,-2 0.3 C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 ⁻⁴ /K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	CTemperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	212	
C Coefficient of linear thermal expansion, transverse 23 to 55 °C 10 4/K ISO 11359-1,-2 1.5 Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	206	
Other properties (23 °C) C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.3	
C Density kg/m³ ISO 1183 1242 Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	1.5	
Bulk density kg/m³ ISO 60 700 Processing conditions for test specimens	Other properties (23 °C)					
Processing conditions for test specimens	C Density		kg/m³	ISO 1183	1242	
	Bulk density		kg/m³	ISO 60	700	
C Injection molding-Melt temperature °C ISO 294 280	Processing conditions for test specimens					
	C Injection molding-Melt temperature		°C	ISO 294	280	



Datasheet

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Property	Test Condition	Unit	Standard	guide value ¹
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	=	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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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.

Conditioning

Conditioning in accordance with ISO 1110 (70 °C; 62 % r.h.)

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