

Datasheet

Durethan ECOBKV140 000000

PA 6-Copolymer, 40% glass fibers, injection molding, improved impact strength

ISO Shortname: ISO 16396-PA 6/66-I,GF40 (R),GR,S14-110

Property	Test Condition	Unit	Standard	guide value ¹	
				d.a.m.	cond.
Rheological properties					
Molding shrinkage, parallel	150x105x3; 290 °C / MT 80 °C; 400 bar	%	acc. ISO 294-4	0.16	
Molding shrinkage, transverse	150x105x3; 290 °C / MT 80 °C; 400 bar	%	acc. ISO 294-4	0.71	
Post- shrinkage, parallel	150x105x3; 120 °C; 4 h	%	acc. ISO 294-4	0.03	
Post- shrinkage, transverse	150x105x3; 120 °C; 4 h	%	acc. ISO 294-4	0.1	
C Molding shrinkage, parallel	60x60x2; 290 °C / MT 80 °C; 600 bar	%	ISO 294-4	0.1	
C Molding shrinkage, transverse	60x60x2; 290 °C / MT 80 °C; 600 bar	%	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.)					
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	11500	6700
C Tensile Stress at break	5 mm/min	MPa	ISO 527-1,-2	180	120
C Tensile Strain at break	5 mm/min	%	ISO 527-1,-2	3.0	6.0
C Tensile creep modulus	1 h	MPa	ISO 899-1		6100
C Tensile creep modulus	1000 h	MPa	ISO 899-1		4900
C Charpy impact strength	23 °C	kJ/m ²	ISO 179-1eU	100	110
C Charpy impact strength	-30 °C	kJ/m ²	ISO 179-1eU	95	95
C Charpy notched impact strength	23 °C	kJ/m ²	ISO 179-1eA	25	30
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	80	90
Izod impact strength	-30 °C	kJ/m ²	ISO 180-1U	75	75
Izod notched impact strength	23 °C	kJ/m ²	ISO 180-1A	20	30
Izod notched impact strength	-30 °C	kJ/m ²	ISO 180-1A	16	16
Flexural modulus	2 mm/min	MPa	ISO 178-A	10400	6200
Flexural strength	2 mm/min	MPa	ISO 178-A	295	175
Flexural strain at flexural strength	2 mm/min	%	ISO 178-A	4.0	6.0
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178-A	280	145
C Puncture maximum force	23 °C	N	ISO 6603-2	1175	1450
C Puncture maximum force	-30 °C	N	ISO 6603-2	975	1000
C Puncture energy	23 °C	J	ISO 6603-2	3.8	5.2
C Puncture energy	-30 °C	J	ISO 6603-2	2.3	2.3
Ball indentation hardness		N/mm ²	ISO 2039-1	200	

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Thermal properties					
C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	213	
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	200	
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 ⁻⁴ /K	ISO 11359-1,-2	0.2	
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	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	650	
Burning behavior US-FMVSS302			ISO 3795	passed	
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	> 200	
Electrical properties (23 °C/50 % r. h.)					
C Relative permittivity	100 Hz	-	IEC 60250	4.0	10
C Relative permittivity	1 MHz	-	IEC 60250	4.0	5.0
C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	70	
C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	200	
C Volume resistivity		Ohm·m	IEC 62631-3	1E13	1E09
C Surface resistivity		Ohm	IEC 62631-3	1E14	1E10
C Electric strength	1 mm	kV/mm	IEC 60243-1	40	35
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	575	
Comparative tracking index CTI M	Solution B	Rating	IEC 60112	450 M	
Other properties (23 °C)					
C Water absorption (Saturation value)	Water at 23 °C	%	ISO 62	6	
C Water absorption (Equilibrium value)	23 °C; 50 % RH	%	ISO 62	1.6	
C Density		kg/m ³	ISO 1183	1460	
Bulk density		kg/m ³	ISO 60	700	
Processing conditions for test specimens					
C Injection molding-Melt temperature		°C	ISO 294	290	
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	-	260-290	
Mold temperature		°C	-	80-100	

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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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Typical Properties

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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