Datasheet
Durethan BTC70FM30 000000

PA 6, 70% mineral, injection molding, halogen free flame retardant, improved heat conductivity, heat-aging stabilized

ISO Shortname: ISO16396-PA 6,MD70 FR(61),GF2HR,S10-120

Property	Test Condition	Unit	Standard	guide value [1] d.a.m.	guide value [1] cond.
Rheological properties					
C Molding shrinkage, parallel	60x60x2; 600 bar	%	ISO 294-4	0.9	
C Molding shrinkage, transverse	60x60x2; 600 bar	%	ISO 294-4	0.9	
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	12800	6100
C Tensile Stress at break	5 mm/min	MPa	ISO 527-1,-2	90	55
C Tensile Strain at break	5 mm/min	%	ISO 527-1,-2	1.1	1.8
C Charpy impact strength	23 °C	kJ/m²	ISO 179-1eU	25	25
C Charpy impact strength	-30 °C	kJ/m²	ISO 179-1eU	15	10
C Charpy notched impact strength	23 °C	kJ/m²	ISO 179-1eA	<10	<10
C Charpy notched impact strength	-30 °C	kJ/m²	ISO 179-1eA	<10	<10
Izod impact strength	23 °C	kJ/m²	ISO 180-1U	25	20
Izod impact strength	-30 °C	kJ/m²	ISO 180-1U	17	10
Izod notched impact strength	23 °C	kJ/m²	ISO 180-1A	<10	<10
Izod notched impact strength	-30 °C	kJ/m²	ISO 180-1A	<10	<10
Flexural modulus	2 mm/min	MPa	ISO 178-A	13600	6700
Flexural strength	2 mm/min	MPa	ISO 178-A	165	90
Flexural strain at flexural strength	2 mm/min	%	ISO 178-A	2	2.1
Ball indentation hardness		N/mm²	ISO 2039-1	340	
Thermal properties					
C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	220	
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	145	
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	195	
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	210	
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10^{-4}/K	ISO 11359-1,-2	0.4	
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10^{-4}/K	ISO 11359-1,-2	0.4	
Thermal conductivity, in-plane		W/(m·K)	ISO 22007-4	1.7	
Thermal conductivity, through-plane		W/(m·K)	ISO 22007-4	1.2	
Burning behavior UL 94	1.5 mm	Class	UL 94	V-0	
Resistance to heat (ball pressure test)		°C	IEC 60695-10-2	200	
Glow wire test (GWFI)	0.75 mm	°C	IEC 60695-2-12	960	
Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-12	960	
Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-12	960	

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Property	Test Condition	Unit	Standard	guide value [1] d.a.m.	guide value [1] cond.
Glow wire test (GWIT)	0.75 mm	°C	IEC 60695-2-13	775	
Glow wire test (GWIT)	1.5 mm	°C	IEC 60695-2-13	775	
Glow wire test (GWIT)	3.0 mm	°C	IEC 60695-2-13	800	
Electrical properties (23 °C/50 % r. h.)					
C Volume resistivity		Ohm·m	IEC 62631-3	3.4E13	
C Surface resistivity		Ohm	IEC 62631-3	7.2E14	
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	Solution A	PLC	UL 746A	0	
Other properties (23 °C)					
C Water absorption (Saturation value)	Water at 23 °C	%	ISO 62	2.7	
C Water absorption (Equilibrium value)	23 °C; 50 % RH	%	ISO 62	0.9	
C Density		kg/m³	ISO 1183	1925	
Bulk density		kg/m³	ISO 60	700	
Processing conditions for test specimens					
C Injection molding-Melt temperature		°C	ISO 294	280	
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	-	260-300	
Mold temperature		°C	-	80-100	

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.

Health and Safety

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Envalior products mentioned in this publication. Before working with these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets (MSDS) and product labels. Consult your Envalior representative or contact the Product Safety and Regulatory Affairs Department. For materials that are not Envalior products, appropriate industrial hygiene and other safety precautions recommended by their manufacturer(s) must be followed.

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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.