Datasheet
Durethan ECOAKV35H3.0 000000

PA 66, 35% glass fibers, injection molding, heat-aging stabilized

ISO Shortname: ISO 16396-PA 66,GF35 (R),GHR,S14-110

Property	Test Condition	Unit	Standard	guide value [1] d.a.m.	guide value [1] cond.
Rheological properties					
C Molding shrinkage, parallel	60x60x2; 290 °C / MT 80 °C; 600 bar	%	ISO 294-4	0.37	
C Molding shrinkage, transverse	60x60x2; 290 °C / MT 80 °C; 600 bar	%	ISO 294-4	1.06	
Post- shrinkage, parallel	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.05	
Post- shrinkage, transverse	60x60x2; 120 °C; 4 h	%	ISO 294-4	0.09	
Mechanical properties (23 °C/50 % r. h.)					
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	11200	7500
C Tensile Stress at break	5 mm/min	MPa	ISO 527-1,-2	200	135
C Tensile Strain at break	5 mm/min	%	ISO 527-1,-2	3.0	5.0
C Tensile creep modulus	1 h	MPa	ISO 899-1		7000
C Tensile creep modulus	1000 h	MPa	ISO 899-1		5800
C Charpy impact strength	23 °C	kJ/m²	ISO 179-1eU	85	90
C Charpy impact strength	-30 °C	kJ/m²	ISO 179-1eU	70	75
C Charpy notched impact strength	23 °C	kJ/m²	ISO 179-1eA	12	20
C Charpy notched impact strength	-30 °C	kJ/m²	ISO 179-1eA	10	10
Izod impact strength	23 °C	kJ/m²	ISO 180-1U	80	
Izod impact strength	-30 °C	kJ/m²	ISO 180-1U	70	
Izod notched impact strength	23 °C	kJ/m²	ISO 180-1A	12	15
Izod notched impact strength	-30 °C	kJ/m²	ISO 180-1A	10	10
Flexural modulus	2 mm/min	MPa	ISO 178-A	10500	7000
Flexural strength	2 mm/min	MPa	ISO 178-A	300	220
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	170
C Puncture maximum force	23 °C	N	ISO 6603-2	1030	
C Puncture maximum force	-30 °C	N	ISO 6603-2	900	
C Puncture energy	23 °C	J	ISO 6603-2	3.9	
C Puncture energy	-30 °C	J	ISO 6603-2	2.8	
Thermal properties					
C Melting temperature	10 °C/min	°C	ISO 11357-1,-3	263	
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	250	
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	250	
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	> 230	
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	1.0	

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Property	Test Condition	Unit	Standard	guide value [1] d.a.m. / cond.
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	23
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	600
Burning behavior US-FMVSS302	>=1.0 mm		ISO 3795	passed
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	> 230
Electrical properties (23 °C/50 % r. h.)				
C Relative permittivity	100 Hz	-	IEC 60250	5.0
C Relative permittivity	1 MHz	-	IEC 60250	4.0
C Dissipation factor	100 Hz	10^{-4}	IEC 60250	300
C Dissipation factor	1 MHz	10^{-4}	IEC 60250	270
C Volume resistivity		Ohm·m	IEC 62631-3	1E13
C Surface resistivity		Ohm	IEC 62631-3	1E15
C Electric strength	1 mm	kV/mm	IEC 60243-1	39
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	5.0
C Water absorption (Equilibrium value)	23 °C; 50 % RH	%	ISO 62	1.8
C Density		kg/m³	ISO 1183	1410
Bulk density		kg/m³	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	-	280-300
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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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.