CELANYL® XS3 GF60 BG 1019 (PRELIMINARY)

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Compound designed for parts with maximu mechanical requirements, typically used to replace metal due to the high stiffness and strength, stable after conditioning. It shows better creep behavior and dimensional stability vs. an equivalent PA66 grade, with lower warpage and excellent surface finish.

Product information

Resin Identification	(PA6I/6T+PA66)-GF60	ISO 1043
Part Marking Code	>(PA6I/6T+PA66)-GF60<	ISO 11469

Rheological properties

Molding shrinkage range, parallel	0.2 - 0.4	%	ISO 294-4, 2577
Molding shrinkage range, normal	0.4 - 0.6	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	3.05E6 / -	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	31200 / -	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.2 / -	%	ISO 527-1/-2
Charpy impact strength, 23 °C	32.3 / -	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23 °C	4.28 / -	ftlb/in²	ISO 179/1eA

Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	500 / *	°F	ISO 11357-1/-3

Flammability

	dry/cond.		
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.1260 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94

Physical/Other properties

	dry/cond.		
Density	0.0614 / -	lb/in³	ISO 1183

Characteristics

Processing	Injection Molding
Special characteristics	Heat stabilized or stable to heat, High Gloss, Specialty appearance, Low Warpage

Additional information

Injection molding

Preprocessing

XS compounds, stored in a moisture-proof packaging, can be processed without drying; however, it is always recommended drying the product that comes from a large package (e.g. Octabin). The suggested moisture content for the process of injection molding is less than 0.15% for grades with low percentage of reinforcement; for grades with high percentage of fiber and to achieve the best surface quality, the moisture content should be lower than 0.10% .
Flame retardant grades must be processed with a maximum moisture content of 0,10%.The drying time depends on the initial moisture content and the drying conditions. Typically 4-8 hours at 80-90 °C using dehumidified air (dew point of

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-20 °C) are suitable conditions for a starting moisture content of 0.20%-0.40%.

Processing

The following conditions apply to a standard injection moulding process of XS compounds. Machine temperatures: barrel 265-290 °C, nozzle and hot runners up to 300 °C (up to 290 °C products with flame retardants). Mould temperatures: 80-100 °C, (80-120 °C highly reinforced grades). Back pressure: typically 5-10 bar (hydraulic pressure). Temperatures exceeding 300 °C and long residence time could lead to degradation and brittleness of the material. In case of gas generation in the melt, please verify moisture content and processing temperatures. Usage of regrind is possible depending on the moulded part characteristics. For further details, please refer to the document 'Instructions for injection moulding' or contact our technical support team.

Postprocessing

Part moulded with XS compounds reach their final performance with a water content of about 1,0% by weight, depending on the grade. This percentage corresponds to the point of equilibrium between the rates of absorption and desorption of moisture. After moulding, in favourable environmental conditions, a part can quickly absorbs moisture up to 0,3-0,5%, while the equilibrium will be reached during its life. Post-treatments of parts may also include the annealing (80-120 °C in oven, up to four hours). This procedure can be useful to relax any internal stresses.

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The above data are preliminary and are subject to change as additional data are developed on subsequent lots.
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