FRIANYL® XS3 GF50 V0 BK 9005/S

PA*-GF50 Celanese

Product Texts

Compound designed for safety parts with high mechanical requirements, typically used to replace metal due to the high stiffness and strength, stable after conditioning. Combines flame retardant properties with better creep behavior and dimensional stability vs. an equivalent PA66 grade, with lower warpage and good surface finish.

Flammability @3.2mm nom. thickn.	V-0	-
Flammability @0.8mm nom. thickn.	V-0	-

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
[C] Molding shrinkage, parallel	**0.2 / ***	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**0.4 / ***	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**17500 / -**	MPa	ISO 527
[C] Stress at break	**165 / -**	MPa	ISO 527
[C] Strain at break	**2 / -**	%	ISO 527
[C] Charpy impact strength, +23°C	**42 / -**	kJ/m²	ISO 179/1eU
[C] Charpy impact strength, -30°C	**40 / -**	kJ/m²	ISO 179/1eU
[C] Charpy notched impact strength, +23°C	**9.5 / -**	kJ/m²	ISO 179/1eA
[C] Charpy notched impact strength, -30°C	**8.3 / -**	kJ/m²	ISO 179/1eA

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
[C] Water absorption	**2.5 / ***	%	Sim. to ISO 62
[C] Humidity absorption	**0.8 / ***	%	Sim. to ISO 62
[C] Density	**- / 1650**	kg/m³	ISO 1183

[C]: CAMPUS

Characteristics

Processing
Injection Molding

Features
Creep Resistance, Low Warpage

Delivery form
Granules, Black

Regional Availability
North America, Europe, Asia Pacific

Special Characteristics
Flame retardant, Heat stabilized or stable to heat

Other text information

Injection molding

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