Celanese
The chemistry inside innovation™

FRIANYL® B3 H GF30 V0I - PA6

Description

Polyamide 6 compound, 30% glass fiber reinforced, heat resistant, based on flame retardants halogen and red phosphorous free. Flame rating is V0@0.4mm.
Designed for unattended household appliances components, this grade shows self-extinguishing properties combined with ignition resistance, good mechanical and electrical performances and meets the most stringent safety requirements for insulating materials.
Preliminary Technical Datasheet

Physical properties	Value	Unit	Test Standard
Density	**89.9**	lb/ft³	ISO 1183
Molding shrinkage, parallel (flow)	**0.2 - 0.5**	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	**0.5 - 0.8**	%	ISO 294-4, 2577
Water absorption, 23°C-sat	**5**	%	Sim. to ISO 62
Humidity absorption, 23°C/50%RH	**1.3**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**1.58E6/-**	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	**20300/-**	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	**2.5/-**	%	ISO 527-1, -2
Charpy impact strength, 23°C	**26.2/-**	ft-lb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	**4.52/-**	ft-lb/in²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 20°C/min	**428**	°F	ISO 11357-1/-3
DTUL at 1.8 MPa	**388**	°F	ISO 75-1, -2
DTUL at 0.45 MPa	**428**	°F	ISO 75-1, -2
FMVSS	**SE**	-	ISO 3795 (FMVSS 302)
FMVSS thickness	**0.0394**	in	ISO 3795 (FMVSS 302)
Flammability @3.2mm nom. thickn.	**V-0**	class	UL 94
Flammability @0.4mm nom. thickn.	**V-0**	class	UL 94
Glow wire ignition temperature, 0.8 mm	**1430**	°F	IEC 60695-2-13
Glow wire ignition temperature, 3.2 mm	**1430**	°F	IEC 60695-2-13
Glow wire flammability index, 0.8 mm	**1760**	°F	IEC 60695-2-12
Glow wire flammability index, 3.2 mm	**1760**	°F	IEC 60695-2-12
Ball pressure test	**374**	°F	IEC 60695-10-2

Electrical properties	Value	Unit	Test Standard
Volume resistivity, 23°C	**1E13/-**	Ohm*m	IEC 62631-3-1
Comparative tracking index	**PLC 0/-**	-	UL 746
Comparative tracking index	**Group I**	-	IEC 60112
CTI 50 drops	**600**	V	IEC 60112
CTI 100 drops	**600**	V	IEC 60112

VDA Properties	Value	Unit	Test Standard
FMVSS	**SE**	-	ISO 3795 (FMVSS 302)
FMVSS	**0.0394**	in	ISO 3795 (FMVSS 302)

FRIANYL® B3 H GF30 V0I - PA6 *(EXPERIMENTAL)*

Other text information

Injection Molding Preprocessing

PA materials, stocked 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 moisture content suggested for the injection molding process should be lower than 0.15%, according to the grade and to the molded part characteristics. The materials containing flame retardants should have moisture content below 0.10%. The drying time depends on the 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%.

Injection molding

The following conditions apply to a standard injection molding process. Machine temperatures: barrel 265-290°C (PA66), 235-270°C (PA6), nozzle and hot runners up to 300°C (up to 290°C products with flame retardants). Mold temperatures: 60-80°C, (80-100°C highly reinforced grades). Back pressure: typically, 5-10 bar (hydraulic pressure). Temperatures exceeding 300°C and long residence time could lead to additives 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 molded part characteristics. For further details, please refer to the document 'Instructions for injection molding' or contact our technical support team.

Injection Molding Postprocessing

PA materials reach their final performance with a water content of about 1.5 to 3.5% by weight, depending on the type. This percentage corresponds to the point of equilibrium between the rates of absorption and desorption of moisture. After molding, in favorable environmental conditions, a part can quickly absorbs moisture up to 0.5-1.0%, while the equilibrium will be reached during its life. A conditioning treatment can accelerate further the initial water absorption of the molded parts. Conditioning is usually carried out in hot and humid environment (for example 50°C, 100% RH), inside climatic chambers. Slight dimensional variations (increase in volume due to the water absorbed) must be considered, especially in unfilled grades. Post-treatments of parts may also include the annealing (60-80°C in oven, up to four hours). This procedure can be useful to relax any internal stresses.

Characteristics

Special Characteristics	Flame retardant, Heat resistant
Product Categories	Glass reinforced
Processing	Injection molding
Delivery Form	Granules
Additives	Flame retarding agent

General Disclaimer

effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards.We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

Trademark