Celanese
The chemistry inside innovation™

FRIANYL® B3 GF30 V0

Polyamide 6 compound, 30% glass fiber reinforced, heat resistant, based on flame retardants halogen and red phosphorous free. UL listed V0@0.4mm all color.
Designed for Electrical applications requiring self-extinguishing properties combined with good mechanical performances, this grade meets the most stringent safety requirements for insulating materials.

Product information

Part Marking Code	>PA6-GF30FR(40)<	ISO 11469

Rheological properties

Moulding shrinkage range, parallel	0.2 - 0.5	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.5 - 0.8	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	10300 / -	MPa	ISO 527-1/-2
Stress at break, 5mm/min	140 / -	MPa	ISO 527-1/-2
Strain at break, 5mm/min	3 / -	%	ISO 527-1/-2
Charpy impact strength, 23°C	62.8 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	11.5 / -	kJ/m²	ISO 179/1eA
Ball indentation hardness, H 358/30	210	MPa	ISO 2039-1

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	190	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	210	°C	ISO 75-1/-2
Ball pressure test	175	°C	IEC 60695-10-2
RTI, electrical, 0.75mm	120	°C	UL 746B
RTI, electrical, 3mm	120	°C	UL 746B
RTI, impact, 0.75mm	100	°C	UL 746B
RTI, impact, 3mm	100	°C	UL 746B
RTI, strength, 0.75mm	125	°C	UL 746B
RTI, strength, 3mm	125	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	V-0	class	UL 94
Burning Behav. at thickness h	V-0	class	UL 94
Glow Wire Flammability Index, 0.75mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	775	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3mm	800	°C	IEC 60695-2-13
FMVSS Class	SE		ISO 3795 (FMVSS 302)

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Electrical properties

	dry/cond.		
Volume resistivity	1E13 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E13 / -	Ohm	IEC 62631-3-2
Electric strength	45 / -	kV/mm	IEC 60243-1
Comparative tracking index	Group I		IEC 60112
Comparative tracking index	PLC 0 / -	PLC	UL 746A

Other properties

Humidity absorption, 2mm	1.4	%	Sim. to ISO 62
Water absorption, 2mm	4.8	%	Sim. to ISO 62
Density	1400	kg/m³	ISO 1183

Injection

Melt Temperature Optimum	248	°C	Internal

Characteristics

Additives	Flame retardant, Non-halogenated/Red phosphorous free flame retardant

Additional information

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.

Processing Texts

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 Preprocessing	PA materials, stocked in a moisture-proof packaging, can be processed without

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	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%. Red phosphorous containing grades must always be dried below 0.08%. 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 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.

Other Approvals

Other Approvals

OEM	Specification	Additional Information
VW Group*	VW50134	* best fitting grade to PA6-7-A, not officially approved