

# FRIANYL® A3 GF35 V0 BK 9005/M

## FRIANYL®

*Designed for Electrical applications requiring self-extinguishing properties combined with high stiffness, this grade meets the most stringent safety requirements for insulating materials.*

### Product information

Resin Identification	(PA66+PA6)-GF35 FR(40)	ISO 1043
Part Marking Code	>(PA66+PA6)-GF35 FR(40)<	ISO 11469
Continuous Service Temperature	130 °C	IEC 60216-1

### 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	12500/8500	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	140/95	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	2.1/4.2	%	ISO 527-1/-2
Tensile stress at break, 5mm/min	155/105	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5/4	%	ISO 527-1/-2
Flexural modulus	12000/8000	MPa	ISO 178
Flexural strength	250/160	MPa	ISO 178
Flexural strain at failure	2.5/3.5	%	ISO 178
Charpy impact strength, 23°C	58/62	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	9.5/12.5	kJ/m <sup>2</sup>	ISO 179/1eA
Ball indentation hardness, H 961/30	250/-	MPa	ISO 2039-1
Poisson's ratio	0.33/0.34 <sup>[C]</sup>		

[C]: Calculated

### Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	260/*	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	210/*	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	220/*	°C	ISO 75-1/-2
Ball pressure test	175/-	°C	IEC 60695-10-2
Coefficient of linear thermal expansion (CLTE), parallel	22/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	113/*	E-6/K	ISO 11359-1/-2

### Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0/*	class	IEC 60695-11-10
Burning Behav. at thickness h	V-0/*	class	IEC 60695-11-10
Thickness tested	0.4/*	mm	IEC 60695-11-10
UL recognition	yes/*		UL 94
Glow Wire Flammability Index, 0.75mm	960/-	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0mm	960/-	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960/-	°C	IEC 60695-2-12
FMVSS Class	SE		ISO 3795 (FMVSS 302)

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### Electrical properties

	dry/cond.		
Electric strength	23 / -	kV/mm	IEC 60243-1
Comparative tracking index, 100 drops	600		IEC 60112

### Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.1 / *	%	Sim. to ISO 62
Water absorption, 2mm	4.2 / *	%	Sim. to ISO 62
Density	1470 / -	kg/m <sup>3</sup>	ISO 1183

### Injection

Drying Recommended	yes
Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.1 %
Melt Temperature Optimum	285 °C
Min. melt temperature	270 °C
Max. melt temperature	300 °C
Screw tangential speed	≤0.2 m/s
Mold Temperature Optimum	80 °C
Min. mould temperature	60 °C
Max. mould temperature	100 °C

### Characteristics

Processing	Injection Moulding
Delivery form	Granules
Additives	Flame retardant, Non-halogenated/Red phosphorous free flame retardant
Special characteristics	Flame retardant, Heat stabilised or stable to heat

### Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
VW Group	VW 50133	*Best Fitting Grade To PA66-7-A, Not Officially Approved