

# FRIANYL® A3 GF20 V0

## FRIANYL®

*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

Resin Identification	(PA66+PA6)-GF20 FR(40)	ISO 1043
Part Marking Code	>(PA66+PA6)-GF20 FR(40)<	ISO 11469
Continuous Service Temperature	130 °C	IEC 60216-1

### Rheological properties

Moulding shrinkage range, parallel	0.3 - 0.7 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 1.1 %	ISO 294-4, 2577

### Typical mechanical properties

	dry/cond.		
Tensile modulus	7700 / -	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	128 / -	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.5 / -	%	ISO 527-1/-2
Charpy impact strength, 23 °C	50 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30 °C	45 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23 °C	8.5 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30 °C	6.5 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Ball indentation hardness, H 961/30	210 / -	MPa	ISO 2039-1
Poisson's ratio	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
RTI, electrical, 0.75mm	130	°C	UL 746B
RTI, electrical, 1.5mm	130	°C	UL 746B
RTI, electrical, 3.0mm	130	°C	UL 746B
RTI, impact, 0.75mm	90	°C	UL 746B
RTI, impact, 1.5mm	90	°C	UL 746B
RTI, impact, 3.0mm	90	°C	UL 746B
RTI, strength, 0.75mm	130	°C	UL 746B
RTI, strength, 1.5mm	130 / *	°C	UL 746B
RTI, strength, 3.0mm	130	°C	UL 746B

### Flammability

	dry/cond.		
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	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, 3.0mm	960 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	750 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	750 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	800 / -	°C	IEC 60695-2-13
FMVSS Class	SE		ISO 3795 (FMVSS 302)

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### Electrical properties

	dry/cond.		
Volume resistivity	1E15/-	Ohm.m	IEC 62631-3-1
Surface resistivity	*/1E13	Ohm	IEC 62631-3-2
Electric strength	43/-	kV/mm	IEC 60243-1

### Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.5/*	%	Sim. to ISO 62
Water absorption, 2mm	5.3/*	%	Sim. to ISO 62
Density	1320/-	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