Celanese
The chemistry inside innovation™

FRIANYL® B3 GF25 V0 BK 9005/P/F1

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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	PA6-GF25 FR(40)		ISO 1043
Part Marking Code	>PA6-GF25 FR(40)<		ISO 11469
Continuous Service Temperature	120	°C	IEC 60216-1

Rheological properties

	dry/cond.		
Melt volume-flow rate	8 / *	cm^3/10min	ISO 1133
Temperature	230 / *	°C	
Load	5 / *	kg	
Viscosity number	140 / *	cm^3/g	ISO 307, 1628
Moulding shrinkage range, parallel	0.3 - 0.6	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.6 - 0.9	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	8800 / 5700	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	130 / 90	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3 / 7.5	%	ISO 527-1/-2
Flexural modulus	8500 / -	MPa	ISO 178
Flexural strength	200 / -	MPa	ISO 178
Charpy impact strength, 23°C	58 / 62	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	48 / -	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	9 / 14	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	7 / 9	kJ/m^2	ISO 179/1eA
Ball indentation hardness, H 961/30	210 / -	MPa	ISO 2039-1
Poisson's ratio	0.34 / 0.35[C]		

[C]: Calculated

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	225 / *	°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
RTI, electrical, 0.75mm	120	°C	UL 746B
RTI, impact, 0.75mm	100	°C	UL 746B
RTI, impact, 3.0mm	105	°C	UL 746B
RTI, strength, 0.75mm	125	°C	UL 746B
RTI, strength, 3.0mm	130	°C	UL 746B

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	0.8 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94

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Glow Wire Flammability Index, 0.75mm	960 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0mm	960 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	775 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 2.0mm	800 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	800 / -	°C	IEC 60695-2-13

Electrical properties

	dry/cond.		
Volume resistivity	1E13 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 1E13	Ohm	IEC 62631-3-2
Electric strength	27 / -	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.5 / *	%	Sim. to ISO 62
Water absorption, 2mm	5 / *	%	Sim. to ISO 62
Density	1360 / -	kg/m³	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	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	80	°C
Min. mould temperature	60	°C
Max. mould temperature	90	°C
Ejection temperature	171	°C

Characteristics

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

Automotive

OEM	ADDITIONAL INFORMATION
VW Group	No Spec, Special Part Approval, See Your CE Account Manager.

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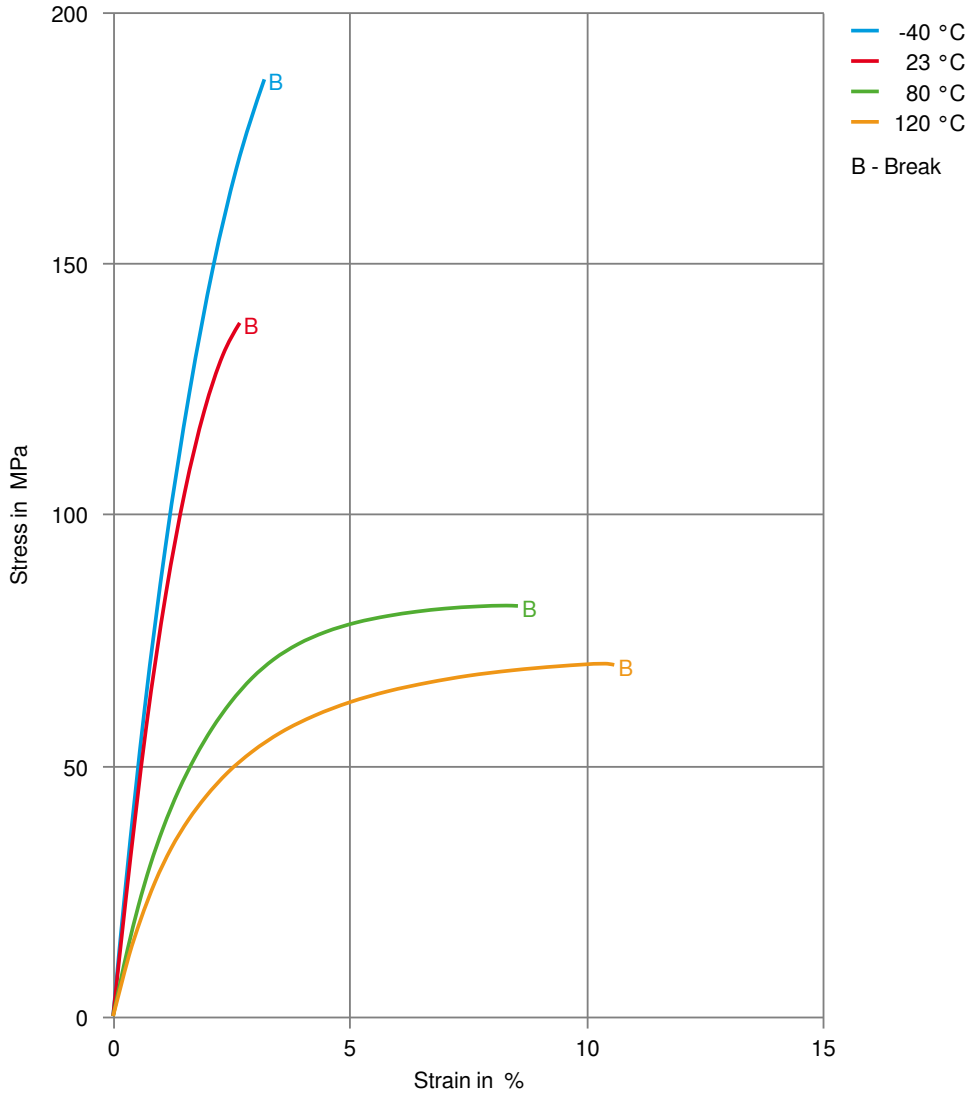
Stress-strain (dry)



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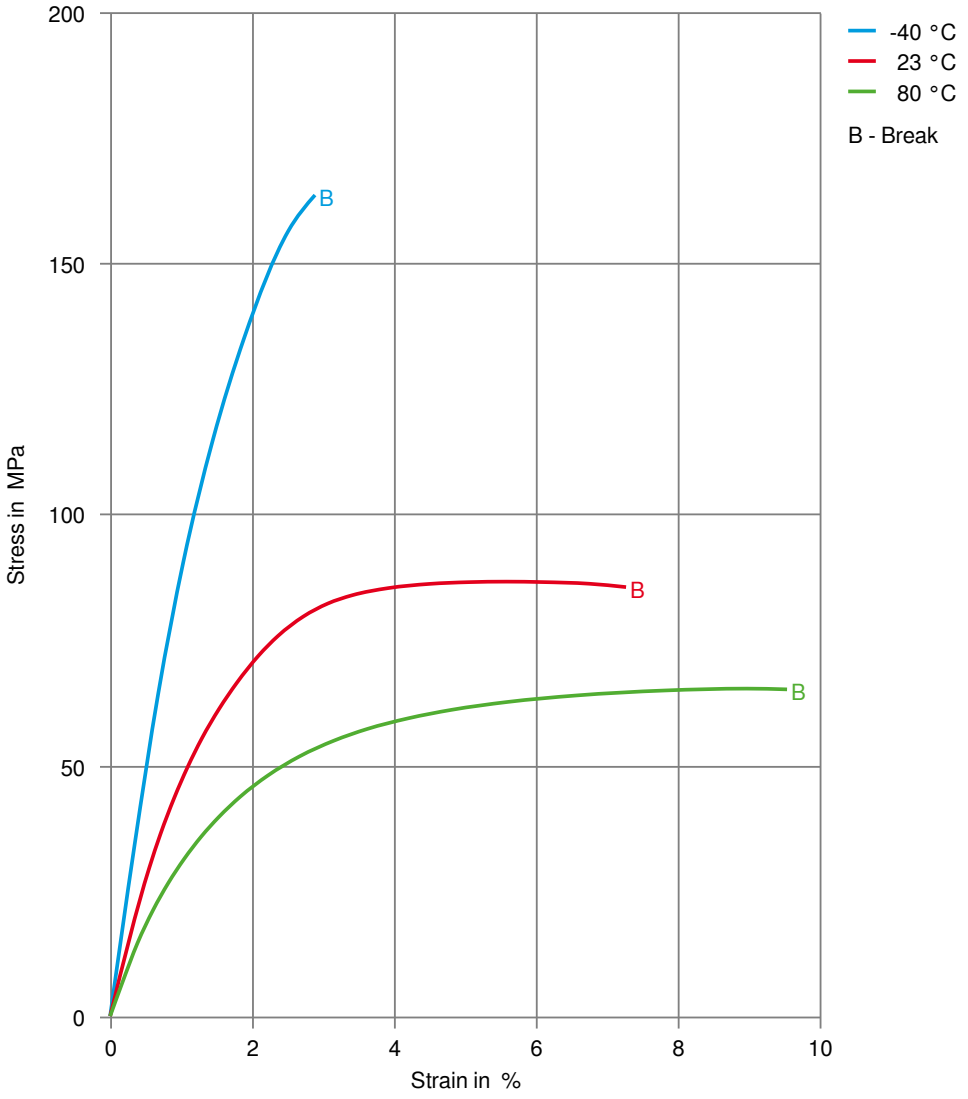
Stress-strain (cond.)



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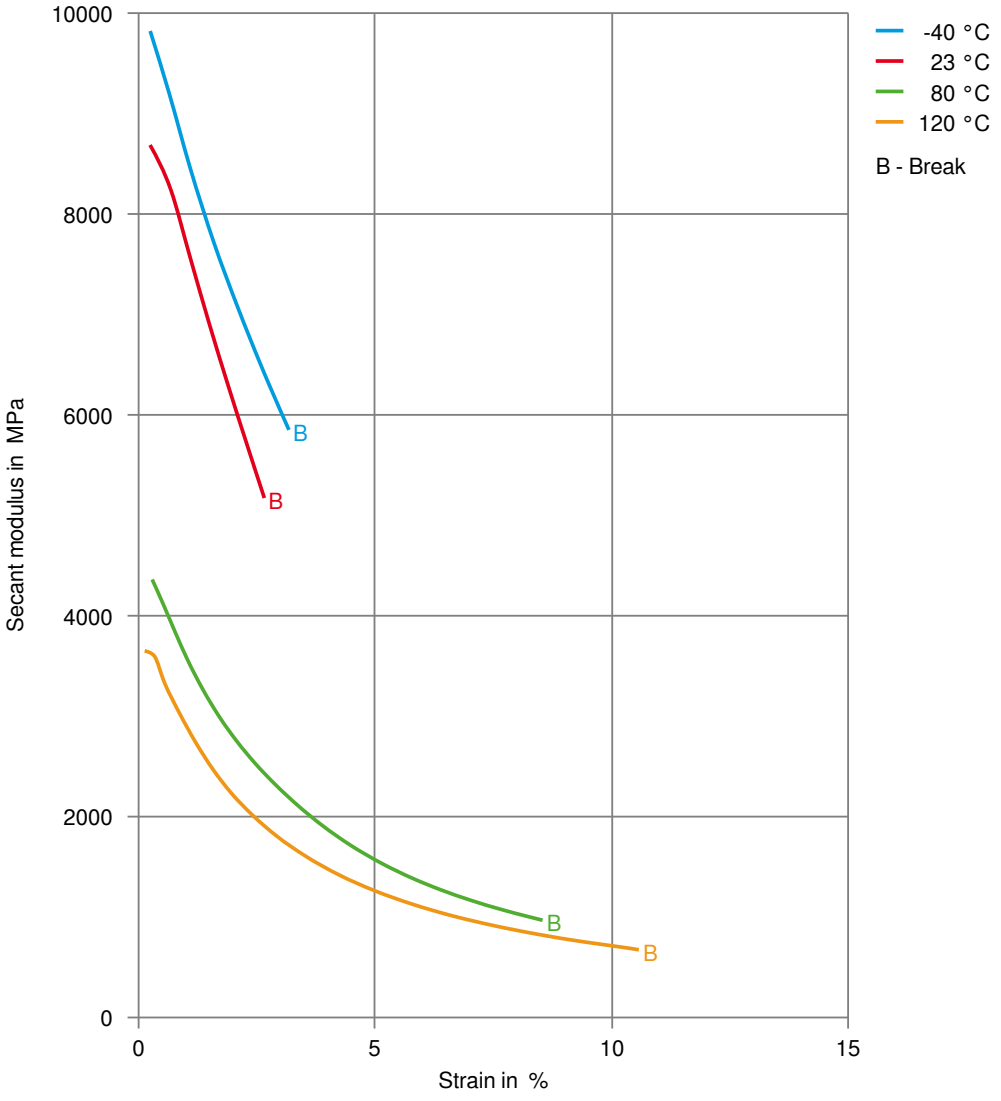
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)