Celanese
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FRIANYL® A3 GF25 V0 BK 9005

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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	(PA66+PA6)-GF25 FR(40)	ISO 1043
Part Marking Code	>(PA66+PA6)-GF25 FR(40)<	ISO 11469
Continuous Service Temperature	130 °C	IEC 60216-1

Rheological properties

	dry/cond.		
Melt volume-flow rate	65 / *	cm^3/10min	ISO 1133
Temperature	275 / *	°C	
Load	5 / *	kg	
Viscosity number	130 / *	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	9400 / 6200	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	130 / 90	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 / 6	%	ISO 527-1/-2
Flexural modulus	9000 / 6100[DS]	MPa	ISO 178
Flexural strength	210 / 160[DS]	MPa	ISO 178
Flexural strain at failure	2.8 / -	%	ISO 178
Charpy impact strength, 23°C	55 / >60	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	8 / 13	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	7 / -	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -40°C	7 / -	kJ/m^2	ISO 179/1eA
Ball indentation hardness, H 961/30	205 / -	MPa	ISO 2039-1
Poisson's ratio	0.34 / 0.35[C]		

[DS]: Derived from similar grade

[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	16.7[1] / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	137[1] / *	E-6/K	ISO 11359-1/-2

[1]: Temperature range: 55°C to 160°C

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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, 3.0mm	960 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	775 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	800 / -	°C	IEC 60695-2-13
FMVSS Class	SE		ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Volume resistivity	1E14 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 1E13	Ohm	IEC 62631-3-2
Electric strength	45 / -	kV/mm	IEC 60243-1

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.5 / *	%	Sim. to ISO 62
Water absorption, 2mm	5.2 / *	%	Sim. to ISO 62
Density	1370 / -	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	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

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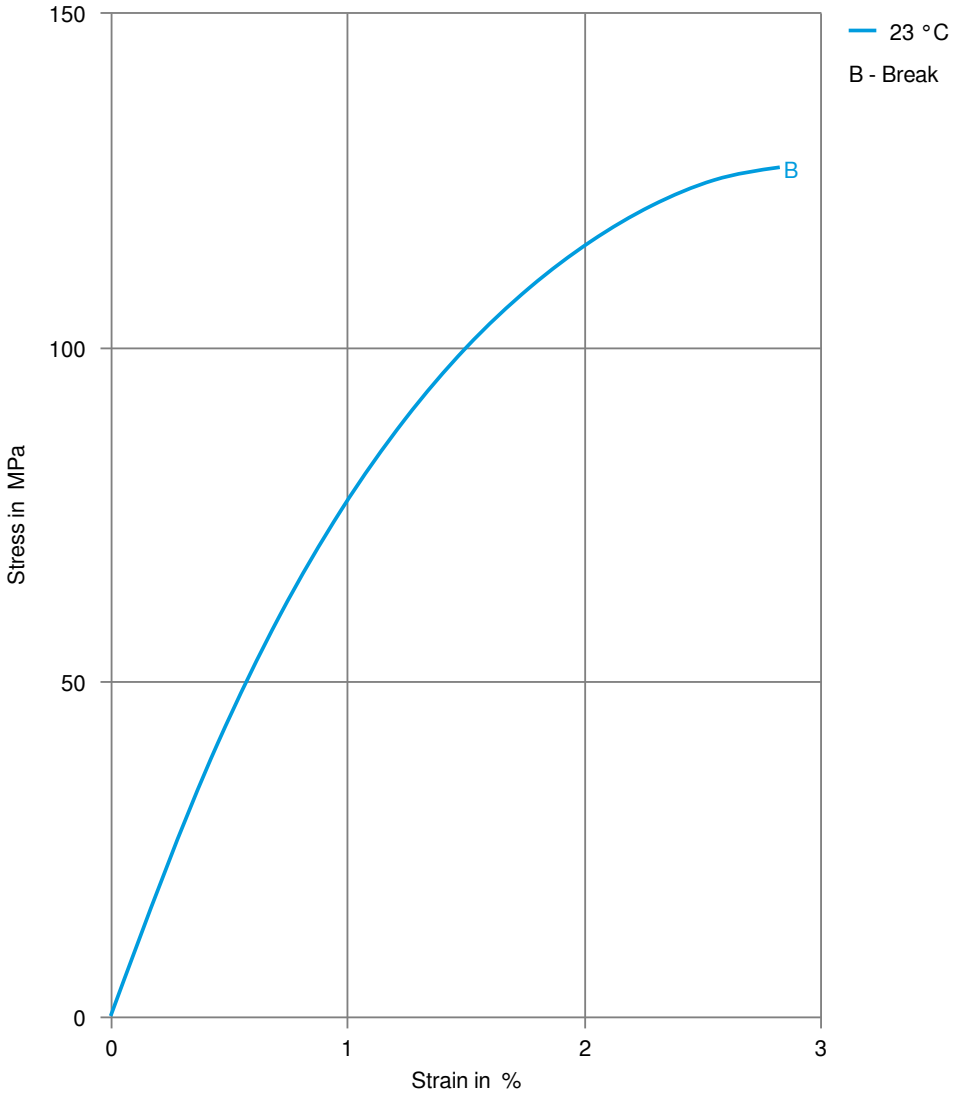
Automotive

OEM	ADDITIONAL INFORMATION
Renault	UB22a, BB/YG, No Spec, Special Part Approval, See Your CE Account Manager.
Renault	UB22b, No Spec, Special Part Approval, See Your CE Account Manager.
Renault	UB22c, No Spec, Special Part Approval, See Your CE Account Manager.
Renault	UB22d, No Spec, Special Part Approval, See Your CE Account Manager.

Stress-strain (dry)



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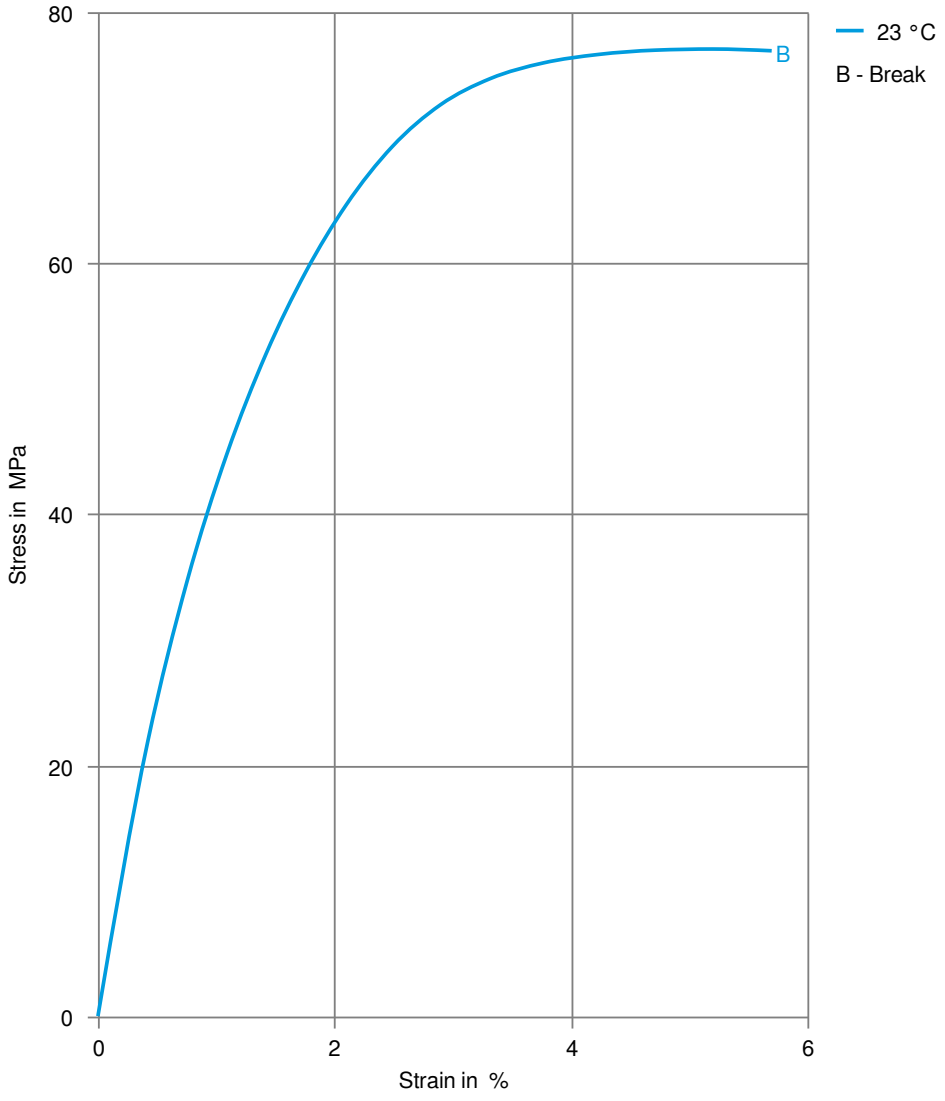
Stress-strain (cond.)



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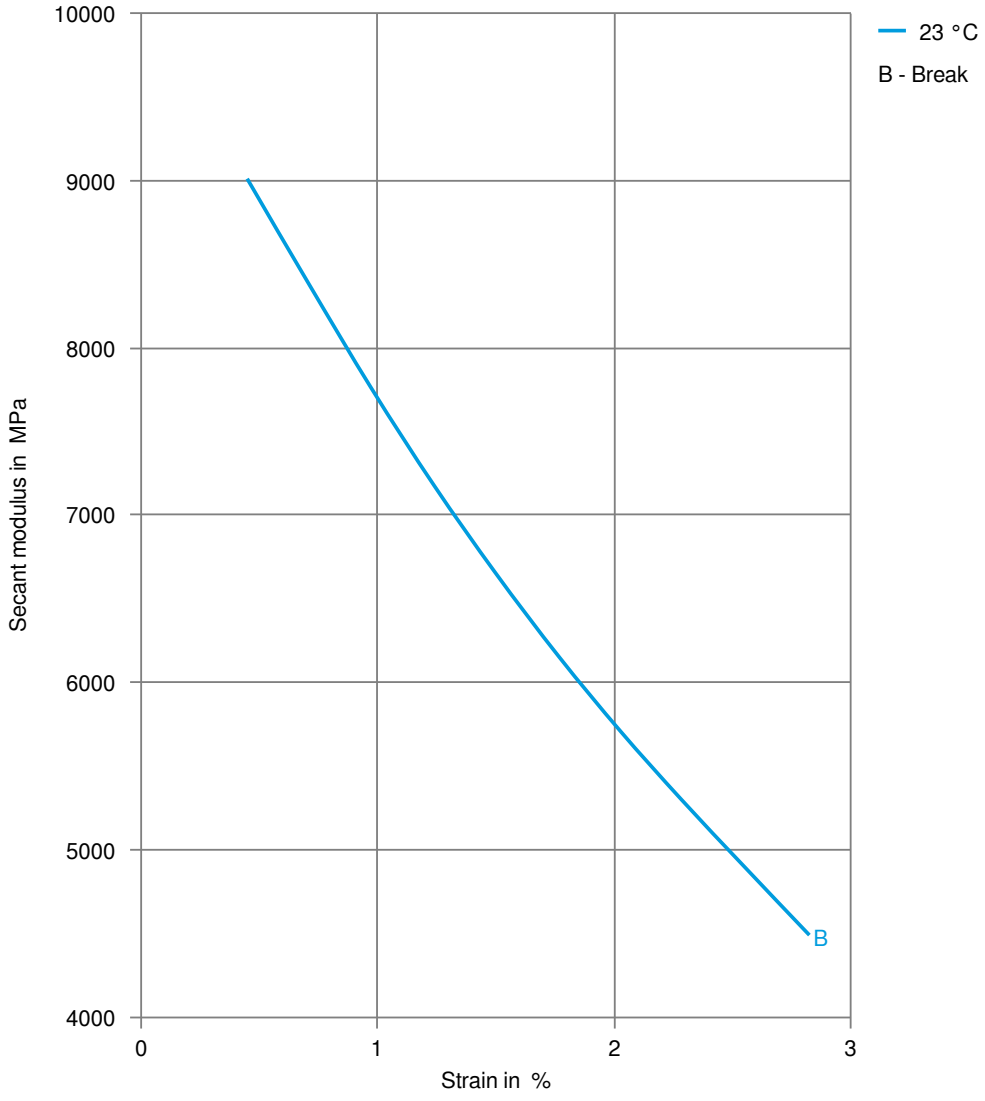
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)