Celanese
The chemistry inside innovation™

FRIANYL® B3 W GF30 V0E BK 9004/YG

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. Good surface quality. Ideal for thick walled parts.

Product information

Resin Identification	PA6-GF30FR(40)		ISO 1043
Part Marking Code	>PA6-GF30FR(40)<		ISO 11469
Continuous Service Temperature	120	°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	10500 / 6500	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	140 / 90	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 / 5	%	ISO 527-1/-2
Flexural modulus	10900 / -	MPa	ISO 178
Flexural strength	240 / -	MPa	ISO 178
Flexural strain at failure	3 / -	%	ISO 178
Charpy impact strength, 23°C	65 / 65	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	55 / 55	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	10.5 / 15	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	8 / 8	kJ/m²	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	205 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	220 / *	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	22 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	128 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity, flow	0.5	W/(m K)	ISO 22007-2
Thermal conductivity, crossflow	0.46	W/(m K)	ISO 22007-2
Thermal conductivity, through plane	0.46	W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow	2.4E-7	m²/s	ISO 22007-4
Effective thermal diffusivity, crossflow	2.2E-7	m²/s	ISO 22007-4
Effective thermal diffusivity, through plane	2.2E-7	m²/s	ISO 22007-4
Specific heat capacity of melt	1.46	J/(kg K)	ISO 22007-4

Celanese
The chemistry inside innovation™

FRIANYL® B3 W GF30 V0E BK 9004/YG

FRIANYL®

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	3.2 / *	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
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
Comparative tracking index, 100 drops	600		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.5 / *	%	Sim. to ISO 62
Water absorption, 2mm	5.2 / *	%	Sim. to ISO 62
Density	1410 / -	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

Characteristics

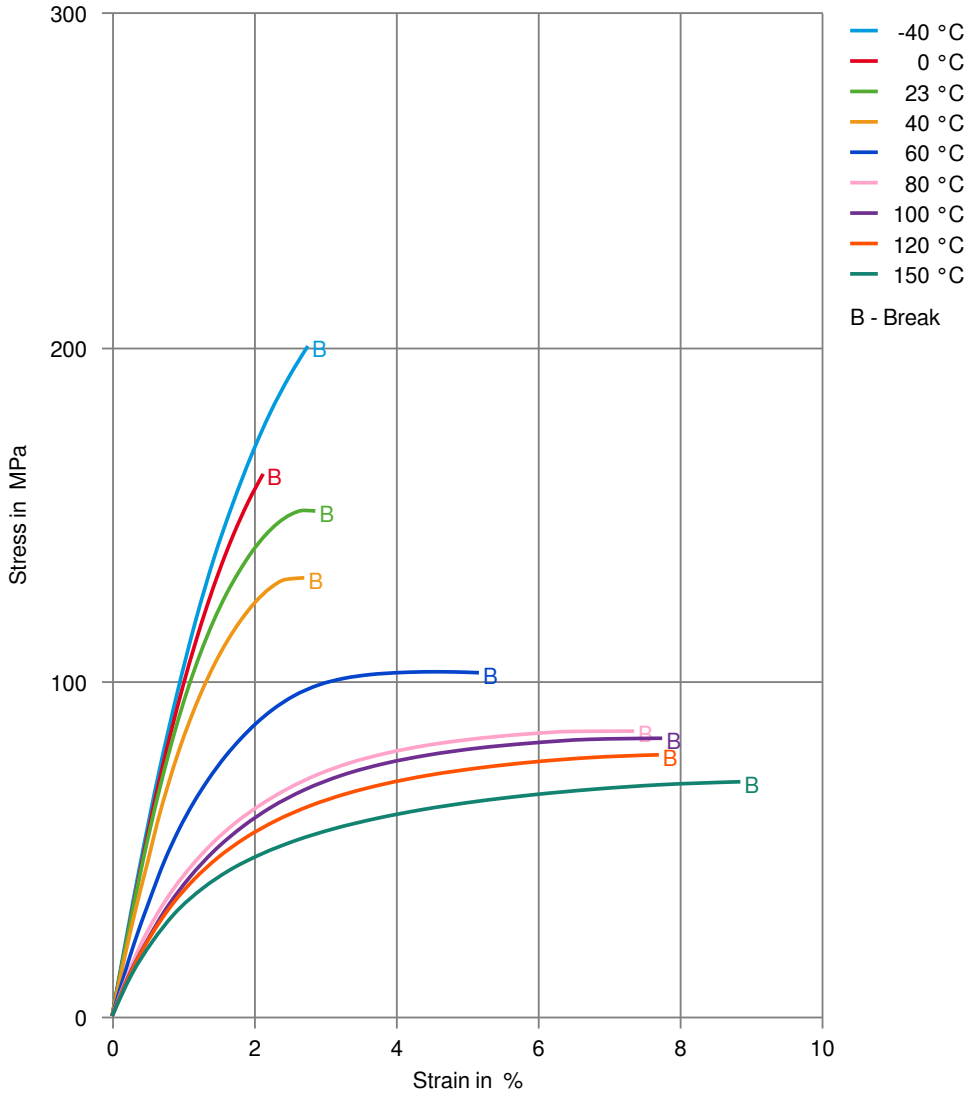
Processing	Injection Moulding
Delivery form	Granules
Additives	Flame retardant, Non-halogenated/Red phosphorous free flame retardant, Low halide content
Special characteristics	Flame retardant, Heat stabilised or stable to heat

Celanese
The chemistry inside innovation™

FRIANYL® B3 W GF30 V0E BK 9004/YG

FRIANYL®

Stress-strain (dry)

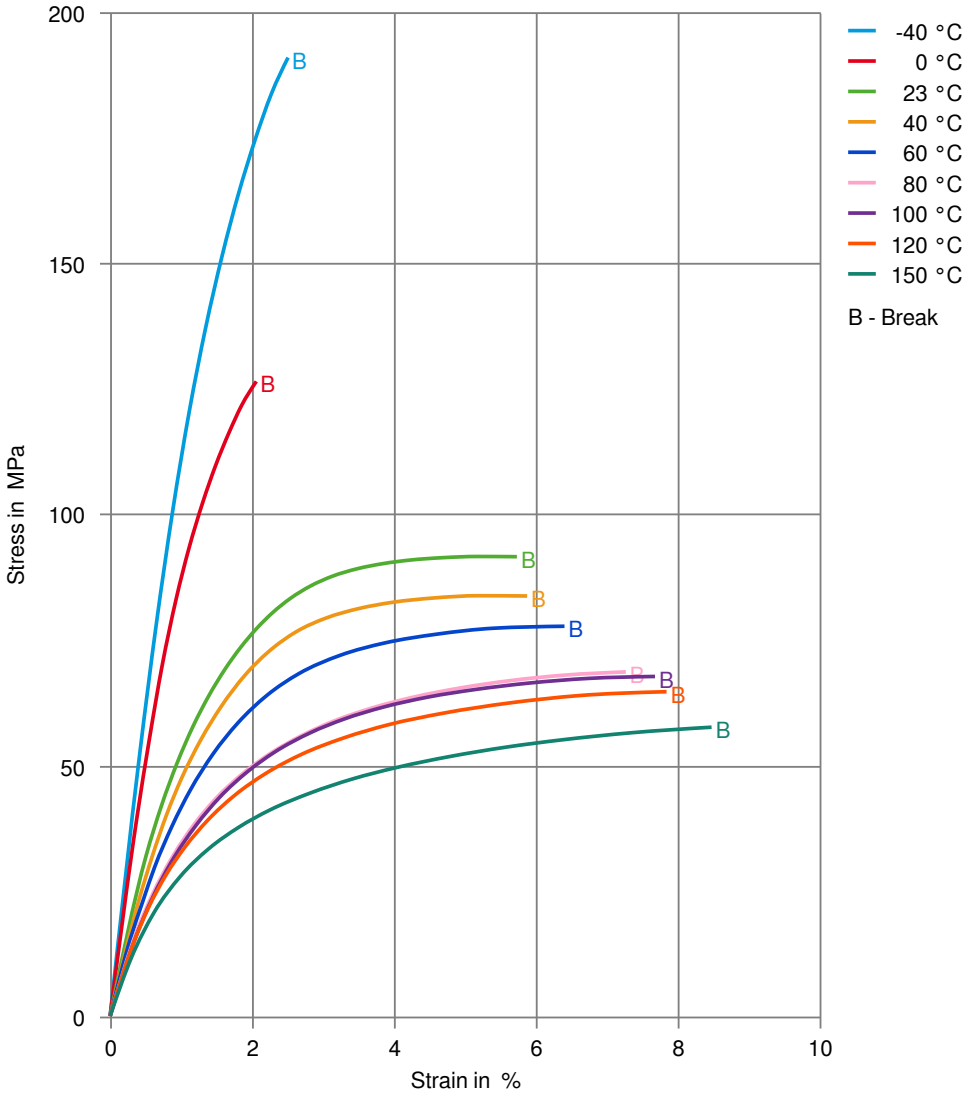


Celanese
The chemistry inside innovation™

FRIANYL® B3 W GF30 V0E BK 9004/YG

FRIANYL®

Stress-strain (cond.)

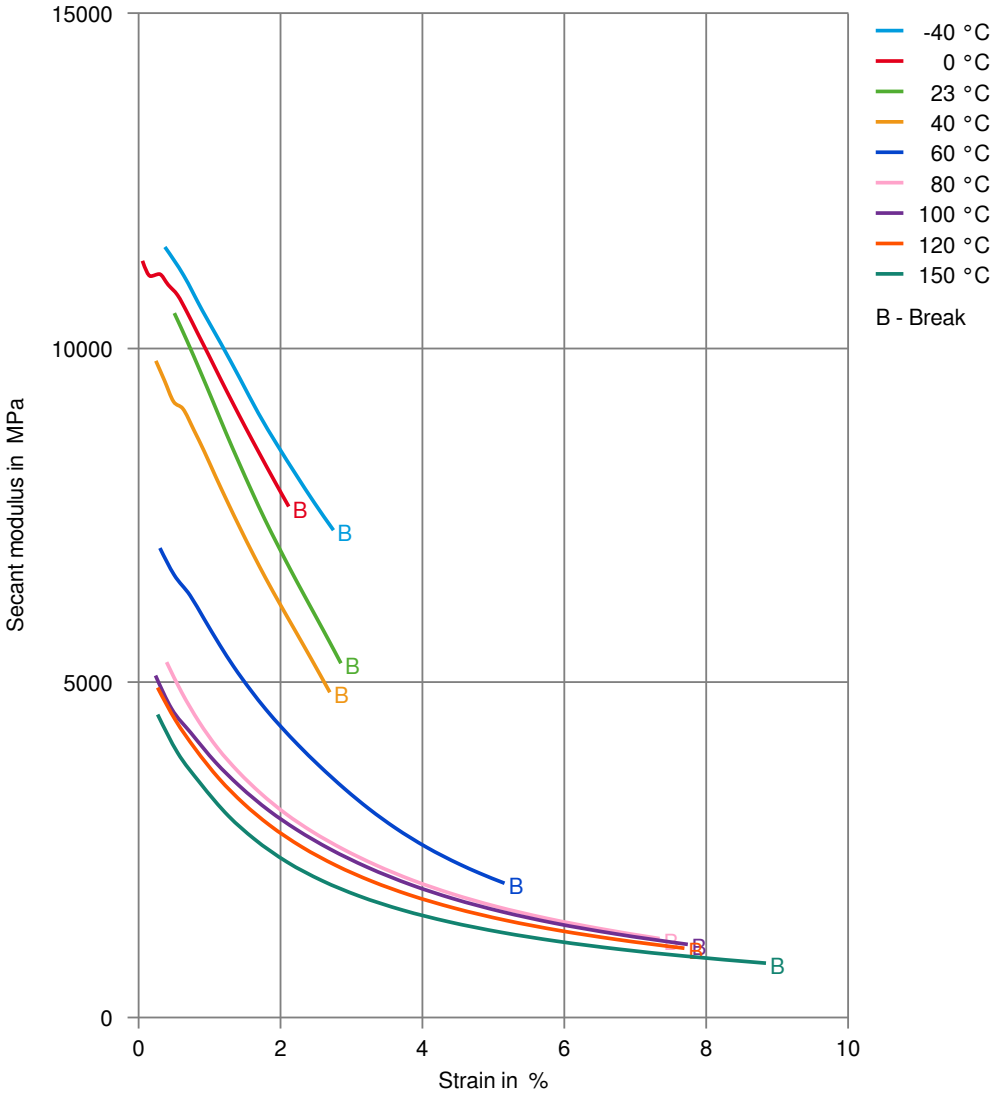


Celanese
The chemistry inside innovation™

FRIANYL® B3 W GF30 V0E BK 9004/YG

FRIANYL®

Secant modulus-strain (dry)



Celanese
The chemistry inside innovation™

FRIANYL® B3 W GF30 V0E BK 9004/YG

FRIANYL®

Secant modulus-strain (cond.)