Celanese
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FRIANYL® A3 V2XI

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Designed for Electrical applications requiring self-extinguishing properties combined with ignition resistance, this grade meets the most stringent safety requirements for insulating materials for the household appliance industry.

Product information

Resin Identification	PA66 FR(16+72)		ISO 1043
Part Marking Code	>PA66 FR(16+72)<		ISO 11469
Continuous Service Temperature	110	°C	IEC 60216-1

Rheological properties

Moulding shrinkage range, parallel	0.8 - 1.2	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.8 - 1.2	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	3550 / 1250	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	60 / -	MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	- / 180	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	4.3 / -	%	ISO 527-1/-2
Tensile strain at break, 50mm/min	- / 33	%	ISO 527-1/-2
Flexural modulus	2700 / 1200	MPa	ISO 178
Flexural strength	110 / 40	MPa	ISO 178
Flexural stress at 3.5%	- / 35	MPa	ISO 178
Flexural strain at failure	- / 5	%	ISO 178
Charpy impact strength, 23°C	65 / N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	- / 9	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	4.4 / -	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	44 / -	kJ/m²	ISO 180/1U
Poisson's ratio	0.36 / -[C]		

[C]: Calculated

Thermal properties

	dry/cond.		
Temperature of deflection under load, 1.8 MPa	100 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	235 / *	°C	ISO 75-1/-2
Ball pressure test	230 / -	°C	IEC 60695-10-2
RTI, electrical, 0.75mm	140	°C	UL 746B
RTI, electrical, 1.5mm	140	°C	UL 746B
RTI, electrical, 3.0mm	140	°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	115	°C	UL 746B
RTI, strength, 1.5mm	115 / *	°C	UL 746B
RTI, strength, 3.0mm	115	°C	UL 746B

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Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Burning Behav. at thickness h	V-2 / *	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	850 / -	°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
Glow Wire Ignition Temperature, 0.75mm	875 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.0mm	900 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	900 / -	°C	IEC 60695-2-13
FMVSS Class	SE		ISO 3795 (FMVSS 302)
Hot Wire Ignition, 0.75mm	PLC 0 / *	s	UL 746A
Hot Wire Ignition, 1.5mm	PLC 0 / *	s	UL 746A
Hot Wire Ignition, 3mm	PLC 0 / *	s	UL 746A

Electrical properties

	dry/cond.		
High Amperage Arc Ignition Category, 1.5 mm	PLC 0 / *	class	UL 746A

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1 / *	%	Sim. to ISO 62
Water absorption, 2mm	6 / *	%	Sim. to ISO 62
Density	1330 / -	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	270	°C
Min. melt temperature	265	°C
Max. melt temperature	285	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	80	°C
Min. mould temperature	70	°C
Max. mould temperature	90	°C

Characteristics

Processing	Injection Moulding
Delivery form	Granules
Additives	Flame retardant
Special characteristics	Flame retardant, Heat stabilised or stable to heat

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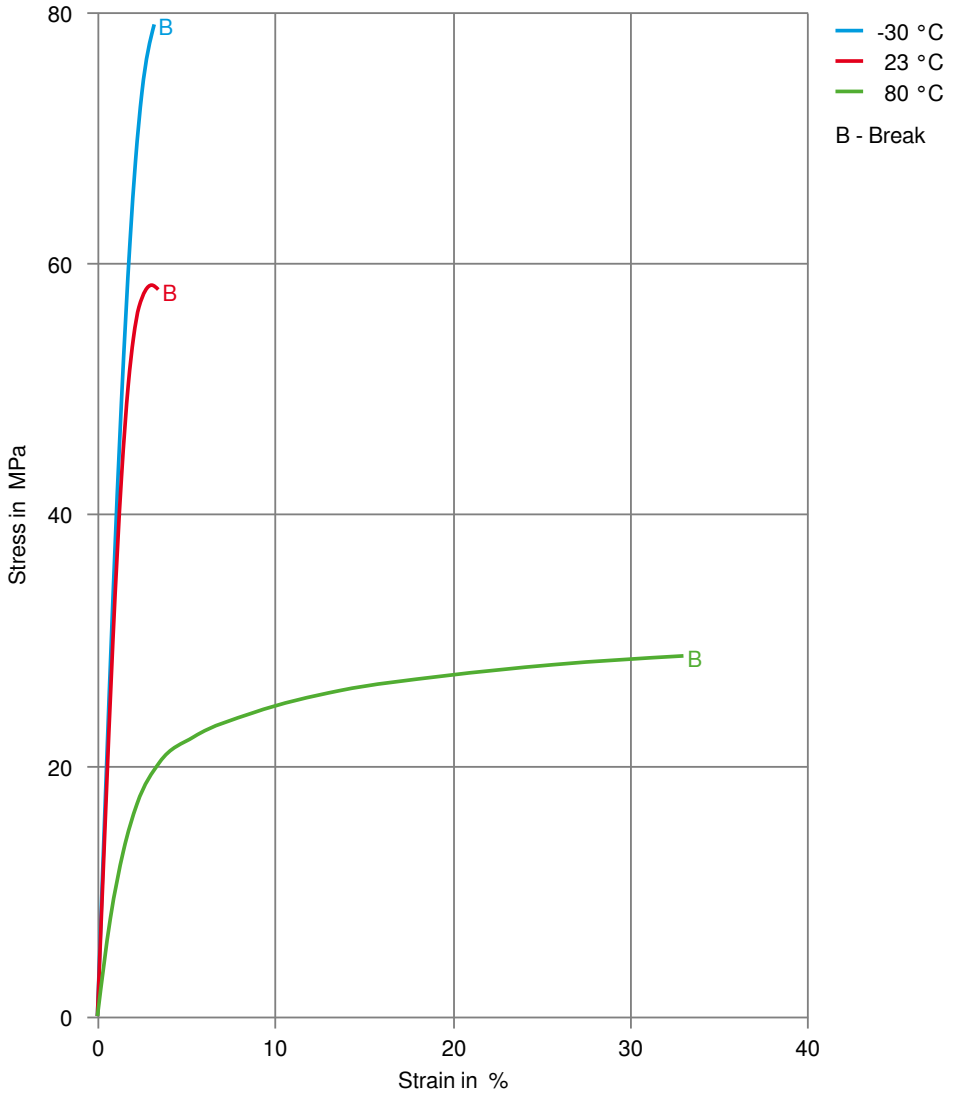
Stress-strain (dry)



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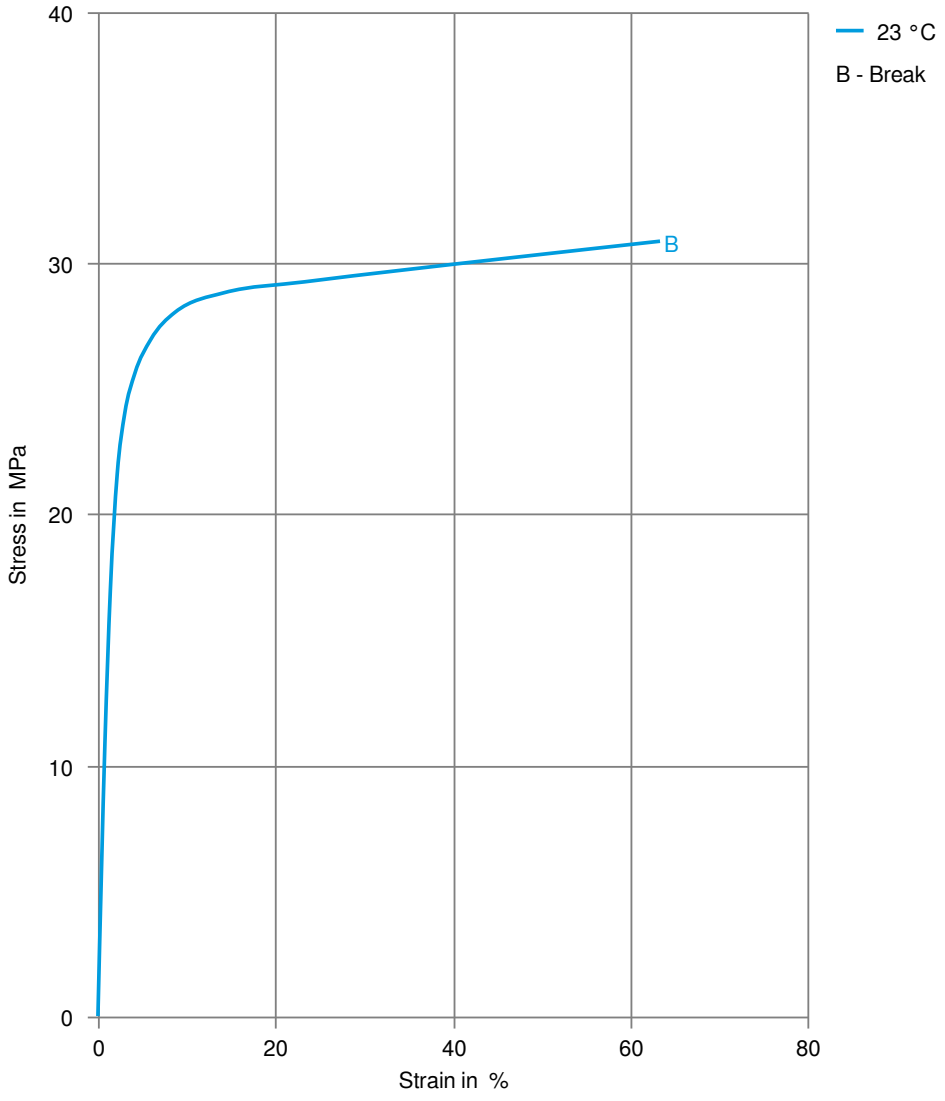
Stress-strain (cond.)



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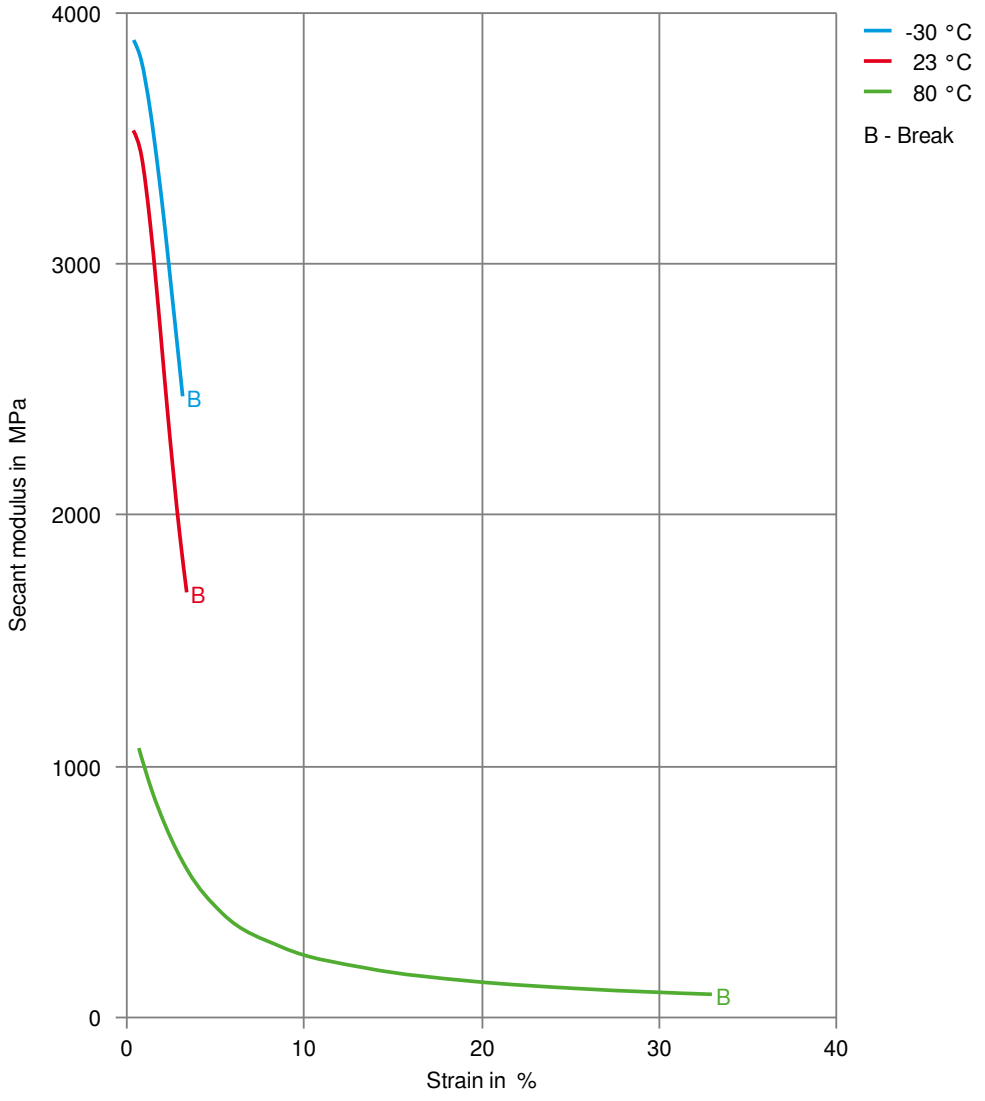
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)