



Crastin® FR684NH1 BK591 (PRELIMINARY)

THERMOPLASTIC POLYESTER RESIN

Crastin® FR684NH1 is a 25% Glass Reinforced, Flame Retardant, Non-Halogenated, Polybutylene Terephthalate

Product information

Resin Identification	PBT-GF25FR(40)	ISO 1043
Part Marking Code	>PBT-GF25FR(40)<	ISO 11469

Rheological properties

Molding shrinkage, parallel	0.5 %	ISO 294-4, 2577
Molding shrinkage, normal	1.3 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	11100 MPa	ISO 527-1/-2
Stress at break	100 MPa	ISO 527-1/-2
Strain at break	2.3 %	ISO 527-1/-2
Flexural Modulus	11200 MPa	ISO 178
Flexural Strength	164 MPa	ISO 178
Charpy impact strength, 73°F	39 kJ/m ²	ISO 179/1eU
Charpy impact strength, -22°F	42 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 73°F	7 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -22°F	6.4 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 73°F	7 kJ/m ²	ISO 180/1A
Izod notched impact strength, -22°F	7 kJ/m ²	ISO 180/1A
Poisson's ratio	0.33 -	

Thermal properties

Melting temperature, 18°F/min	223 °C	ISO 11357-1/-3
Glass transition temperature, 18°F/min	55 °C	ISO 11357-1/-2
Temp. of deflection under load, 260 psi	205 ^[DS] °C	ISO 75-1/-2
CLTE, Parallel, -40-23°C	23 ^[DS] E-6/K	ISO 11359-1/-2
CLTE, Parallel, 23-55°C(73-130°F)	29 ^[DS] E-6/K	ASTM E 831
CLTE, Parallel, 55-160°C	20 ^[DS] E-6/K	ISO 11359-1/-2
CLTE, Normal, -40-23°C	66 ^[DS] E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, Normal, 23-55°C (73-130°F)	122 ^[DS] E-6/K	ASTM E 831
Coeff. of linear therm. expansion, Normal, 55-160°C	127 ^[DS] E-6/K	ISO 11359-1/-2
RTI, electrical, 30mil	130 °C	UL 746B
RTI, electrical, 60mil	130 °C	UL 746B
RTI, electrical, 120mil	130 °C	UL 746B
RTI, impact, 30mil	125 °C	UL 746B
RTI, impact, 60mil	125 °C	UL 746B
RTI, impact, 120mil	125 °C	UL 746B



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RTI, strength, 30mil	140 °C	UL 746B
RTI, strength, 60mil	140 °C	UL 746B
RTI, strength, 120mil	140 °C	UL 746B

[DS]: Derived from similar grade

Flammability

Burning Behav. at 60mil nom. thickn.	V-0 class	IEC 60695-11-10
Thickness tested	1.5 mm	IEC 60695-11-10
UL recognition	yes -	UL 94
Burning Behav. at thickness h	V-0 class	IEC 60695-11-10
Thickness tested	0.75 mm	IEC 60695-11-10
UL recognition	yes -	UL 94
Oxygen index	40 ^[DS] %	ISO 4589-1/-2
Glow Wire Flammability Index, 30mil	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 60mil	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 120mil	960 °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 30mil	750 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 60mil	750 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 120mil	800 °C	IEC 60695-2-13

[DS]: Derived from similar grade

Electrical properties

Volume resistivity	>1E13 ^[DS] Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 ^[DS] Ohm	IEC 62631-3-2
Electric strength	35 kV/mm	IEC 60243-1
Comparative tracking index	600 -	IEC 60112
Comparative tracking index	PLC	UL 746A

[DS]: Derived from similar grade

Other properties

Humidity absorption, 80mil	0.1 ^[DS] %	Sim. to ISO 62
Water absorption, 80mil	0.25 ^[DS] %	Sim. to ISO 62
Density	1520 ^[DS] kg/m ³	ISO 1183

[DS]: Derived from similar grade

Injection

Drying Recommended	yes
Drying Temperature	120 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.04 %
Melt Temperature Optimum	250 °C
Min. melt temperature	240 °C
Max. melt temperature	260 °C



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Mold Temperature Optimum	80 °C
Min. mold temperature	30 °C
Max. mold temperature	130 °C
Hold pressure range	≥60 MPa
Hold pressure time	3 s/mm
Back pressure	As low as possible MPa
Ejection temperature	170 °C

Characteristics

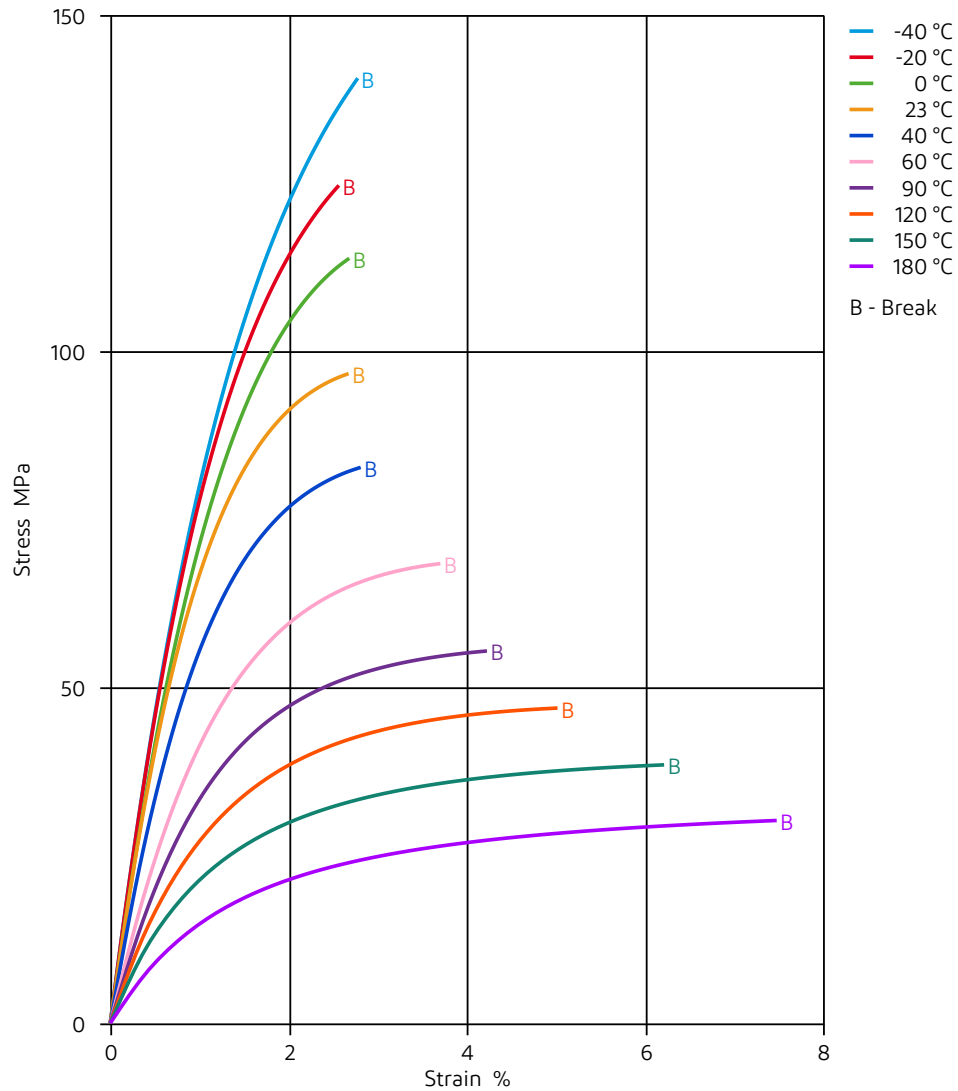
Additives	Flame retardant, Non-halogenated/Red phosphorus free flame retardant
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Stress-strain

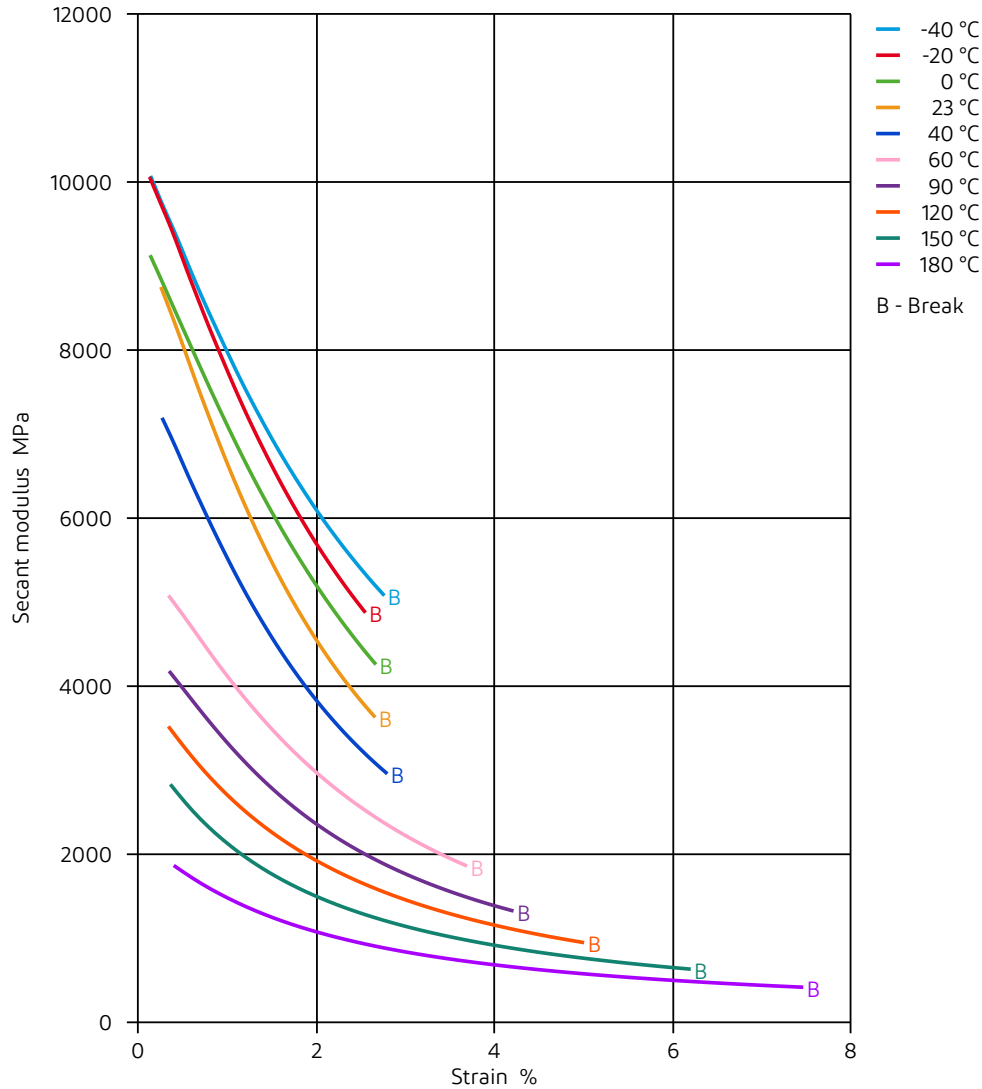




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Secant modulus-strain



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