

Crastin® FR684NH1 BK591

THERMOPLASTIC POLYESTER RESIN

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

Product information

Resin Identification	PBT-GF25 FR(40+30)	ISO 1043
Part Marking Code	>PBT-GF25 FR(40+30)<	ISO 11469

Rheological properties

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

Typical mechanical properties

Tensile modulus	9200 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	91 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.3 %	ISO 527-1/-2
Charpy impact strength, 23°C	39 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	42 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	7 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	6.4 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.34	

Thermal properties

Melting temperature, 10°C/min	223 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	205 ^[DS] °C	ISO 75-1/-2
Coeff. of linear therm. expansion, 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
Coeff. of linear therm. expansion, parallel, 55-160°C	20 ^[DS] E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	66 ^[DS] E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	127 ^[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
RTI, electrical, 0.75mm	130 °C	UL 746B
RTI, electrical, 1.5mm	130 °C	UL 746B
RTI, electrical, 3.0mm	130 °C	UL 746B
RTI, impact, 0.75mm	125 °C	UL 746B
RTI, impact, 1.5mm	125 °C	UL 746B
RTI, impact, 3.0mm	125 °C	UL 746B
RTI, strength, 0.75mm	140 °C	UL 746B
RTI, strength, 1.5mm	140 °C	UL 746B
RTI, strength, 3.0mm	140 °C	UL 746B

[DS]: Derived from similar grade

Crastin® FR684NH1 BK591

THERMOPLASTIC POLYESTER RESIN

Flammability

Burning Behav. at 1.5mm 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	0.4 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Oxygen index	40 ^[DS] %	ISO 4589-1/-2
Glow Wire Flammability Index, 0.4mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960 °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	750 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 0.4mm	800 °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	750 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	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, 23 °C	0 PLC	UL 746A

[DS]: Derived from similar grade

Physical/Other properties

Humidity absorption, 2mm	0.1 ^[DS] %	Sim. to ISO 62
Water absorption, 2mm	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	≤0.02 %
Melt Temperature Optimum	250 °C
Min. melt temperature	240 °C
Max. melt temperature	260 °C
Mold Temperature Optimum	80 °C
Min. mould temperature	60 °C
Max. mould temperature	130 °C
Hold pressure range	≥60 MPa
Hold pressure time	3 s/mm
Back pressure	As low as possible
Ejection temperature	170 °C

Crastin® FR684NH1 BK591

THERMOPLASTIC POLYESTER RESIN

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent, Flame retardant, Non-halogenated/Red phosphorous free flame retardant
Special characteristics	Flame retardant, Laser Markable

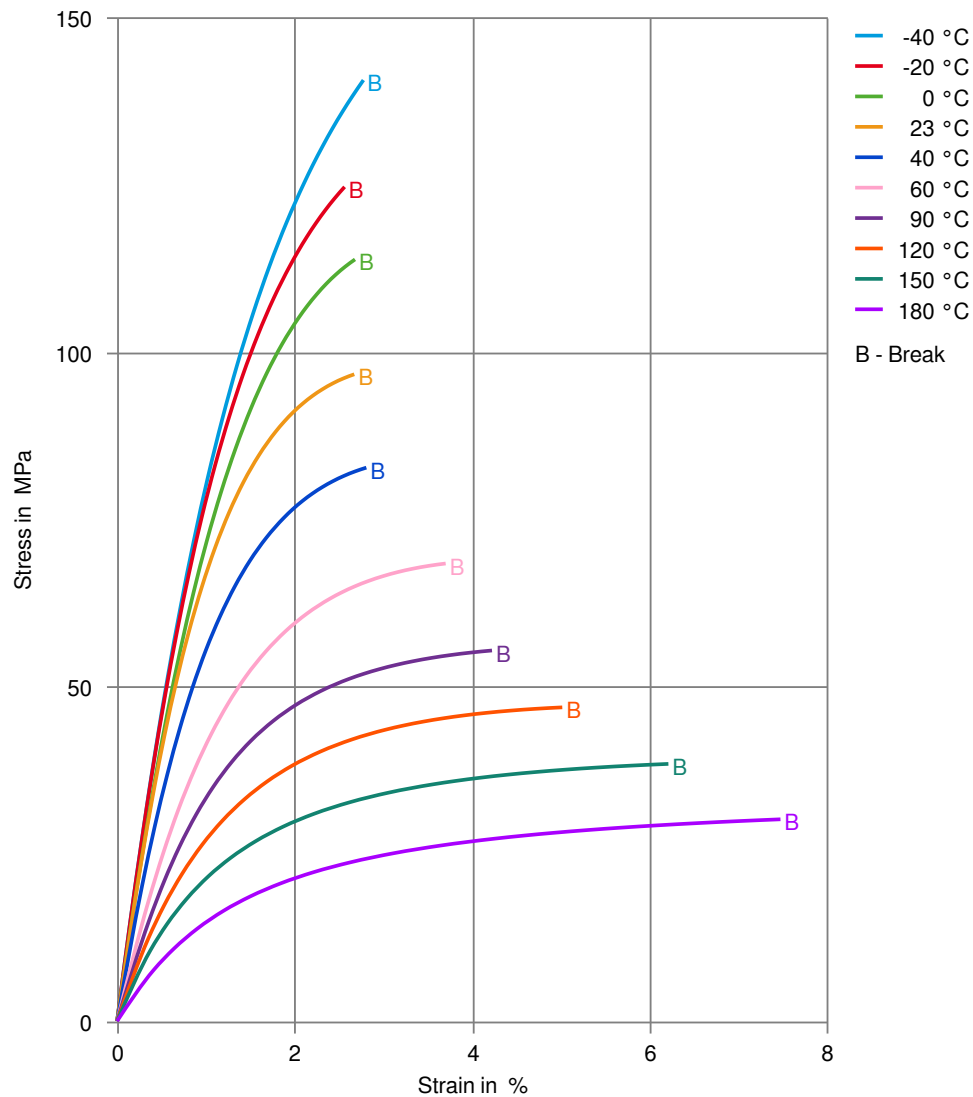
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Stellantis	B62 0300 / 61/219E/170M/C1/C4	01378_19_02640, BK591

Crastin® FR684NH1 BK591

THERMOPLASTIC POLYESTER RESIN

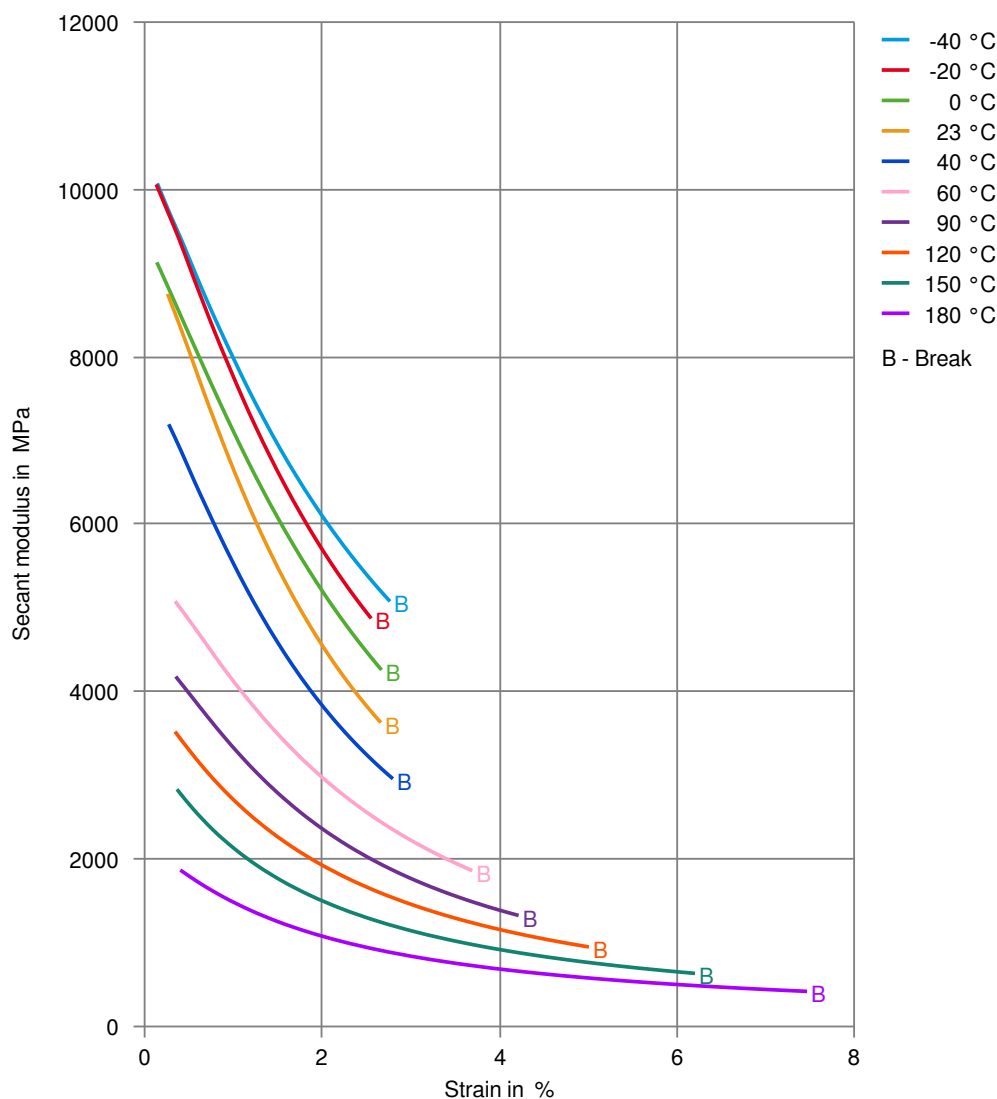
Stress-strain



Crastin® FR684NH1 BK591

THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain



Printed: 2025-05-30

Page: 5 of 5

Revised: 2025-04-22 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

© 2025 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.