

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)	0)<	ISO 11469
Rheological properties			
Moulding shrinkage, parallel Moulding shrinkage, normal	0.5 1.3		ISO 294-4, 2577 ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus Tensile stress at break, 5mm/min Tensile strain at break, 5mm/min Charpy impact strength, 23°C Charpy impact strength, -30°C Charpy notched impact strength, 23°C Charpy notched impact strength, -30°C Poisson's ratio	2.3 39 42 7	MPa	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 179/1eU ISO 179/1eU ISO 179/1eA ISO 179/1eA
Thermal properties			
Melting temperature, 10°C/min Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Coeff. of linear therm. expansion, parallel, -40-23°C CLTE, Parallel, 23-55°C(73-130°F) Coeff. of linear therm. expansion, parallel, 55-160°C Coeff. of linear therm. expansion, normal, -40-23°C Coefficient of linear thermal expansion (CLTE), Normal, 23-55°C	205 ^[DS] 23 ^[DS] 29 ^[DS] 20 ^[DS]	°C °C E-6/K E-6/K E-6/K E-6/K	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 11359-1/-2 ASTM E 831 ISO 11359-1/-2 ISO 11359-1/-2 ASTM E 831
(73-130°F) Coefficient of linear thermal expansion (CLTE), normal, 55-160°C	127 ^[DS]	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm RTI, electrical, 1.5mm RTI, electrical, 3.0mm RTI, impact, 0.75mm RTI, impact, 1.5mm RTI, impact, 3.0mm RTI, strength, 0.75mm RTI, strength, 1.5mm RTI, strength, 3.0mm	130 130 130 125 125 125 140 140		UL 746B UL 746B UL 746B UL 746B UL 746B UL 746B UL 746B UL 746B
[DS]: Derived from similar grade			

Printed: 2024-09-02 Page: 1 of 4

Revised: 2024-07-16 Source: Celanese Materials Database



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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/m³	ISO 1183
[DS]: Derived from similar grade		

Injection

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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	30	°C
Max. mould temperature	130	°C
Hold pressure range	≥60	MPa
Hold pressure time	3	s/mm
Back pressure	As low as	MPa
	possible	
Ejection temperature	170	°C

Printed: 2024-09-02 Page: 2 of 4

Revised: 2024-07-16 Source: Celanese Materials Database



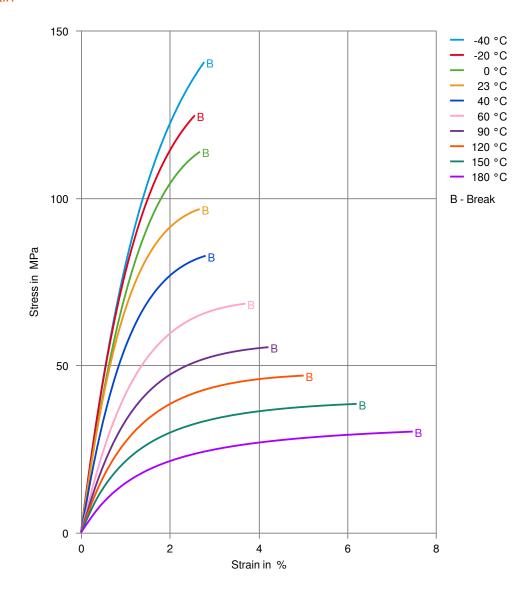
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Characteristics

Additives

Flame retardant, Non-halogenated/Red phosphorous free flame retardant

Stress-strain



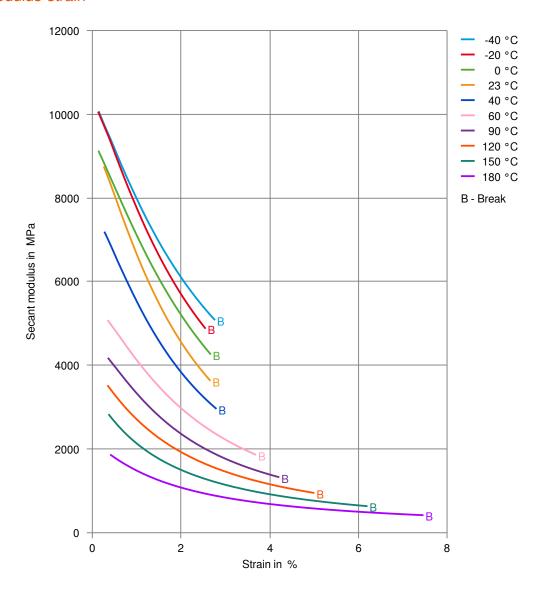
Printed: 2024-09-02 Page: 3 of 4

Revised: 2024-07-16 Source: Celanese Materials Database



THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain



Printed: 2024-09-02 Page: 4 of 4

Revised: 2024-07-16 Source: Celanese Materials Database

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