Crastin® FR685NH1 BK591LM

THERMOPLASTIC POLYESTER RESIN

Crastin® FR685NH1 BK591LM is a 30% Glass Reinforced, Flame Retardant, Non-Halogenated, Polybutylene Terephthalate

Product information

Resin Identification	PBT-GF30 FR(40+30)	ISO 1043
Part Marking Code	>PBT-GF30 FR(40+30)<	ISO 11469

Rheological properties

Melt volume-flow rate	25.5	cm^3/10min	ISO 1133
Temperature	482	°F	
Load	11	lb	
Viscosity number	2440	in^3/lb	ISO 307, 1628
Molding shrinkage range, parallel	0.1 - 0.3	%	ISO 294-4, 2577
Molding shrinkage range, normal	1 - 1.3	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	1.57E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	13900	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2	%	ISO 527-1/-2
Flexural modulus	1.61E6	psi	ISO 178
Flexural strength	22500	psi	ISO 178
Flexural strain at failure	2	%	ISO 178
Charpy notched impact strength, 23°C	3.28	ftlb/in^2	ISO 179/1eA

Thermal properties

Melting temperature, 10°C/min	435	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	131	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	406	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.11	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), Parallel, 23-55°C(73-130°F)	0.111	E-4/°F	ASTM E 831
Coefficient of linear thermal expansion (CLTE), parallel, -40-23°C	0.111	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, 55-160°C	0.111	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.583	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), Normal,23-55°C (73-130°F)	0.556	E-4/°F	ASTM E 831
Coefficient of linear thermal expansion (CLTE), normal, -40-23°C	0.333	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, 55-160°C	0.722	E-4/°F	ISO 11359-1/-2
Thermal conductivity, flow	0.37	W/(m K)	ISO 22007-2
RTI, electrical, 0.75mm	266	°F	UL 746B
RTI, electrical, 1.5mm	266	°F	UL 746B

Crastin® FR685NH1 BK591LM

THERMOPLASTIC POLYESTER RESIN

RTI, electrical, 3.0mm	266	°F	UL 746B
RTI, impact, 0.75mm	257	°F	UL 746B
RTI, impact, 1.5mm	257	°F	UL 746B
RTI, impact, 3.0mm	257	°F	UL 746B
RTI, strength, 0.75mm	284	°F	UL 746B
RTI, strength, 1.5mm	284	°F	UL 746B
RTI, strength, 3.0mm	284	°F	UL 746B

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0157	in	IEC 60695-11-10
UL recognition	yes		UL 94
Glow Wire Flammability Index, 0.4mm	1760	°F	IEC 60695-2-12
Glow Wire Flammability Index, 0.75mm	1760	°F	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	1760	°F	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	1760	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	1380	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 0.4mm	1380	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	1380	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	1470	°F	IEC 60695-2-13
FMVSS Class	SE		ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 1000Hz	4.07[OT]		IEC 62631-2-1
Dissipation factor, 100Hz	35[OT]	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Electric strength	914	kV/in	IEC 60243-1
Comparative tracking index	600		IEC 60112

[OT]: One time tested

Physical/Other properties

Humidity absorption, 2mm	0.1[DS]	%	Sim. to ISO 62
Water absorption, 2mm	0.25[DS]	%	Sim. to ISO 62
Density	0.0567	lb/in³	ISO 1183

[DS]: Derived from similar grade

Injection

Drying Recommended	yes	
Drying Temperature	248	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	482	°F
Min. melt temperature	464	°F
Max. melt temperature	500	°F
Mold Temperature Optimum	176	°F
Min. mold temperature	140	°F
Max. mold temperature	266	°F
Hold pressure range	≥8700	psi

Crastin® FR685NH1 BK591LM

THERMOPLASTIC POLYESTER RESIN

Hold pressure time	0.0762	s/mil
Back pressure	as low as possible	psi
Ejection temperature	338	°F

Characteristics

Processing	Injection Molding
Additives	Release agent, Flame retardant, Non-halogenated/Red phosphorus free flame retardant
Special characteristics	Flame retardant, Laser Markable

Revised: 2026-04-21 Source: Celanese Materials Database

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