Celanese
The chemistry inside innovation™

Crastin® FR685NH1 BK591LM (PRELIMINARY)

THERMOPLASTIC POLYESTER RESIN

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

Product information

Resin Identification	PBT-GF30FR(40)	ISO 1043
Part Marking Code	>PBT-GF30FR(40)<	ISO 11469

Rheological properties

Melt volume-flow rate	25.5	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	5	kg	
Viscosity number	88	cm^3/g	ISO 307, 1157, 1628

Typical mechanical properties

Tensile Modulus	10800	MPa	ISO 527-1/-2
Stress at break, 5mm/min	96	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.1	%	ISO 527-1/-2
Charpy notched impact strength, 23°C	6.9	kJ/m^2	ISO 179/1eA
Poisson's ratio	0.34		

Thermal properties

Melting temperature, 10°C/min	224	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	55	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	208	°C	ISO 75-1/-2
Thermal conductivity	0.37	W/(m K)	ISO 22007-2
RTI, electrical, 0.75mm	130[1]	°C	UL 746B
RTI, electrical, 1.5mm	130[1]	°C	UL 746B
RTI, electrical, 3mm	130[1]	°C	UL 746B
RTI, impact, 0.75mm	125[1]	°C	UL 746B
RTI, impact, 1.5mm	125[1]	°C	UL 746B
RTI, impact, 3mm	125[1]	°C	UL 746B
RTI, strength, 0.75mm	140[1]	°C	UL 746B
RTI, strength, 1.5mm	140	°C	UL 746B
RTI, strength, 3mm	140[1]	°C	UL 746B

[1]: https://iq.ul.com/ul/cert.aspx?ULID=104511959

Flammability

Burning Behav. at thickness h	V-0	class	UL 94
Thickness tested	0.4	mm	UL 94
UL recognition	yes		UL 94
Glow Wire Flammability Index, 0.4mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75mm	960	°C	IEC 60695-2-12

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Glow Wire Flammability Index, 1.5mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	750	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 0.4mm	750	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	750	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3mm	800	°C	IEC 60695-2-13
FMVSS Class	SE		ISO 3795 (FMVSS 302)

[1]: https://iq.ul.com/ul/cert.aspx?ULID=104511959

Electrical properties

Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Electric strength	36	kV/mm	IEC 60243-1
Comparative tracking index	600		IEC 60112

Other properties

Humidity absorption, 2mm	0.1[DS]	%	Sim. to ISO 62
Water absorption, 2mm	0.25[DS]	%	Sim. to ISO 62
Density	1570	kg/m³	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	Internal
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 possible	MPa	
Ejection temperature	170	°C	Internal

Characteristics

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

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