

# Crastin® FR685NH1 OR162

## THERMOPLASTIC POLYESTER RESIN

Crastin® FR685NH1 OR162 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

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

### Typical mechanical properties

Tensile modulus	11600 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	102 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.1 %	ISO 527-1/-2
Flexural modulus	11200 MPa	ISO 178
Flexural strength	160 MPa	ISO 178
Charpy impact strength, 23°C	36 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	7 kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, 23°C	7 kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength, -30°C	7.0 kJ/m <sup>2</sup>	ISO 180/1A
Poisson's ratio	0.33	

### Thermal properties

Melting temperature, 10°C/min	223 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	55 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	205 °C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	222 °C	ISO 75-1/-2

### Flammability

Burning Behav. at thickness h	V-0 class	IEC 60695-11-10
Thickness tested	0.4 mm	IEC 60695-11-10
UL recognition	yes <sup>[1]</sup>	UL 94
Glow Wire Flammability Index, 0.4mm	960 <sup>[1]</sup> °C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75mm	960 <sup>[1]</sup> °C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	960 <sup>[1]</sup> °C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960 <sup>[1]</sup> °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	750 <sup>[1]</sup> °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 0.4mm	750 <sup>[1]</sup> °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	750 <sup>[1]</sup> °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	825 <sup>[1]</sup> °C	IEC 60695-2-13
FMVSS Class	SE	ISO 3795 (FMVSS 302)

[1]: <https://iq.ul.com/ul/cert.aspx?ULID=104497409>

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### Electrical properties

Comparative tracking index	600	IEC 60112
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### Physical/Other properties

Humidity absorption, 2mm	0.1 <sup>[DS]</sup> %	Sim. to ISO 62
Water absorption, 2mm	0.25 <sup>[DS]</sup> %	Sim. to ISO 62
Density	1570 kg/m <sup>3</sup>	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 MPa
Ejection temperature	170 °C

### Characteristics

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

### Automotive

OEM	STANDARD
Hyundai	MS941-03 Type F-5 FRV0 CT10