



ISO 11359-1/-2

# Crastin® SK615SF BK591

## THERMOPLASTIC POLYESTER RESIN

Common features of Crastin® thermoplastic polyester resin include mechanical and physical properties such as stiffness and toughness, heat resistance, friction and wear resistance, excellent surface finishes and good colourability. Crastin® thermoplastic polyester resin has excellent electrical insulation characteristics and high arc-resistant grades are available. Many flame retardant grades have UL recognition (class V-0). Crastin® thermoplastic polyester resin typically has high chemical and heat ageing resistance.

The good melt stability of Crastin® thermoplastic polyester resin normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-24 kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Crastin® thermoplastic polyester resin typically is used in demanding applications in the electronics, electrical, automotive, mechanical engineering, chemical, domestic appliances and sporting goods industry.

Crastin® SK615SF is a 30% glass fiber reinforced, low viscosity polybutylene terephtalate for injection moulding. It has high flow characteristics and is specifically suitable for super fast production. It is laser markable.

### **Product information**

Resin Identification Part Marking Code ISO designation	PBT-GF30 >PBT-GF30< ISO 7792-PBT,MGNR,09-100,GF30		ISO 1043 ISO 11469
Rheological properties			
Intrinsic viscosity Moulding shrinkage, parallel Moulding shrinkage, normal Flow length Flow length - pressure Flow length - width/thickness	80		ISO 307, 1628 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 notched impact strength, 23°C Charpy notched impact strength, -30°C Poisson's ratio	2.5	MPa	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 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 Coefficient of linear thermal expansion (CLTE), parallel	205	°C	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 11359-1/-2

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Coefficient of linear thermal expansion (CLTE),

normal





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## Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	3	mm	IEC 60695-11-10
Glow Wire Flammability Index, 0.75mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	725	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	725	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	725	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	750	°C	IEC 60695-2-13
FMVSS Class	В		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	78	mm/min	ISO 3795 (FMVSS 302)

## **Electrical properties**

Comparative tracking index 350 IEC 60112

## Physical/Other properties

Density 1530 kg/m<sup>3</sup> ISO 1183

## Injection

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Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.04	%
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	MPa
	possible	
Ejection temperature	180	°C

## Characteristics

Processing Injection Moulding

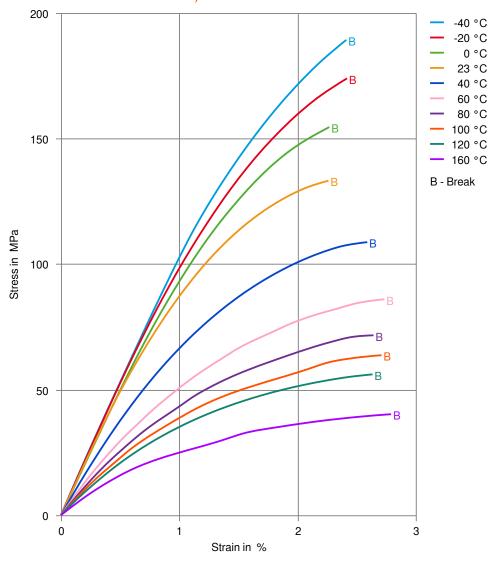
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## THERMOPLASTIC POLYESTER RESIN

Stress-strain (measured on Crastin® SK615SF NC010)



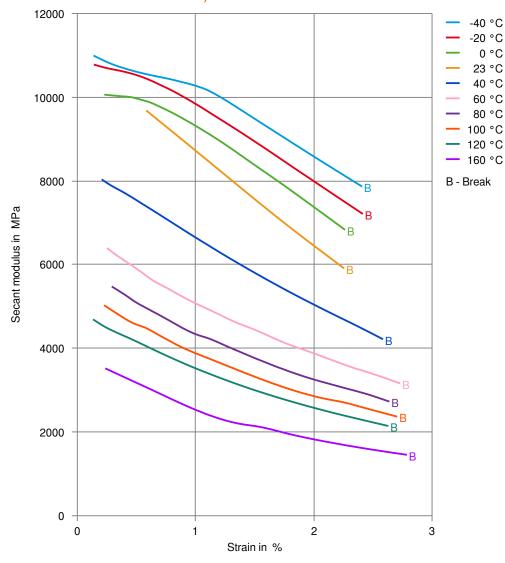
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## THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain (measured on Crastin® SK615SF NC010)



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## THERMOPLASTIC POLYESTER RESIN

### Chemical Media Resistance

#### Acids

- ✓ Acetic Acid (5% by mass), 23°C
- ✓ Citric Acid solution (10% by mass), 23°C
- ✓ Lactic Acid (10% by mass), 23°C
- X Hydrochloric Acid (36% by mass), 23°C
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- X Sulfuric Acid (5% by mass), 23°C
- X Chromic Acid solution (40% by mass), 23°C

#### Bases

- X Sodium Hydroxide solution (35% by mass), 23°C
- ✓ Sodium Hydroxide solution (1% by mass), 23°C
- ✓ Ammonium Hydroxide solution (10% by mass), 23°C

#### **Alcohols**

- ✓ Isopropyl alcohol, 23°C
- ✓ Methanol, 23°C
- ✓ Ethanol, 23°C

#### **Hydrocarbons**

- ✓ n-Hexane, 23°C
- ✓ Toluene, 23°C
- ✓ iso-Octane, 23°C

### Ketones

✓ Acetone, 23°C

#### **Ethers**

✓ Diethyl ether, 23°C

#### Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- X SAE 10W40 multigrade motor oil, 130°C
- X SAE 80/90 hypoid-gear oil, 130 °C
- ✓ Insulating Oil, 23°C

#### Standard Fuels

- X ISO 1817 Liquid 1 E5, 60°C
- ★ ISO 1817 Liquid 2 M15E4, 60°C
- X ISO 1817 Liquid 3 M3E7, 60°C
- X ISO 1817 Liquid 4 M15, 60°C
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ➤ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

### Salt solutions

- ✓ Sodium Chloride solution (10% by mass), 23°C
- ✓ Sodium Hypochlorite solution (10% by mass), 23°C

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- ✓ Sodium Carbonate solution (20% by mass), 23°C
- ✓ Sodium Carbonate solution (2% by mass), 23°C
- ✓ Zinc Chloride solution (50% by mass), 23°C

#### Other

- ✓ Ethyl Acetate, 23°C
- X Hydrogen peroxide, 23°C
- ➤ DOT No. 4 Brake fluid, 130°C
- ➤ Ethylene Glycol (50% by mass) in water, 108°C
- √ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°C
- ✓ Water, 23°C
- X Water, 90°C
- ✓ Phenol solution (5% by mass), 23°C
- ✓ Urea solution (32.5% by mass), 23°C

### Symbols used:

✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

x not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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