

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 terephthalate for injection moulding. It has high flow characteristics and is specifically suitable for super fast production. It is laser markable.

Product information

Resin Identification	PBT-GF30	ISO 1043
Part Marking Code	>PBT-GF30<	ISO 11469
ISO designation	ISO 7792-PBT,MGNR,09-100,GF30	

Rheological properties

Intrinsic viscosity	0.7	ISO 307, 1628
Moulding shrinkage, parallel	0.3 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.1 %	ISO 294-4, 2577
Flow length	410 mm	
Flow length - pressure	80 MPa	
Flow length - width/thickness	2 mm	

Typical mechanical properties

Tensile modulus	9900 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	145 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 %	ISO 527-1/-2
Charpy notched impact strength, 23°C	9 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	7.5 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.34	

Thermal properties

Melting temperature, 10°C/min	222 °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
Coefficient of linear thermal expansion (CLTE), parallel	30 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	80 E-6/K	ISO 11359-1/-2

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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	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	78 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Comparative tracking index	350	IEC 60112
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Physical/Other properties

Density	1530 kg/m ³	ISO 1183
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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
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	180 °C

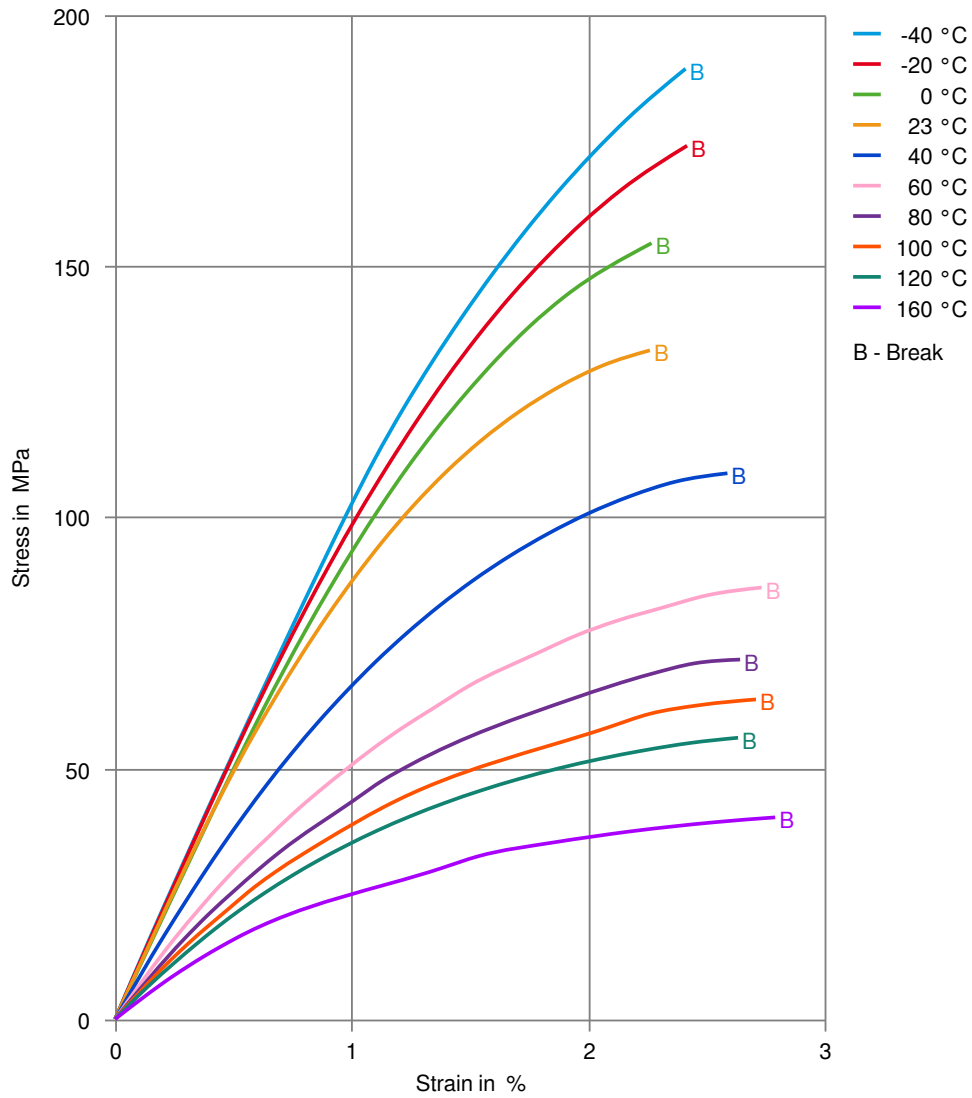
Characteristics

Processing	Injection Moulding
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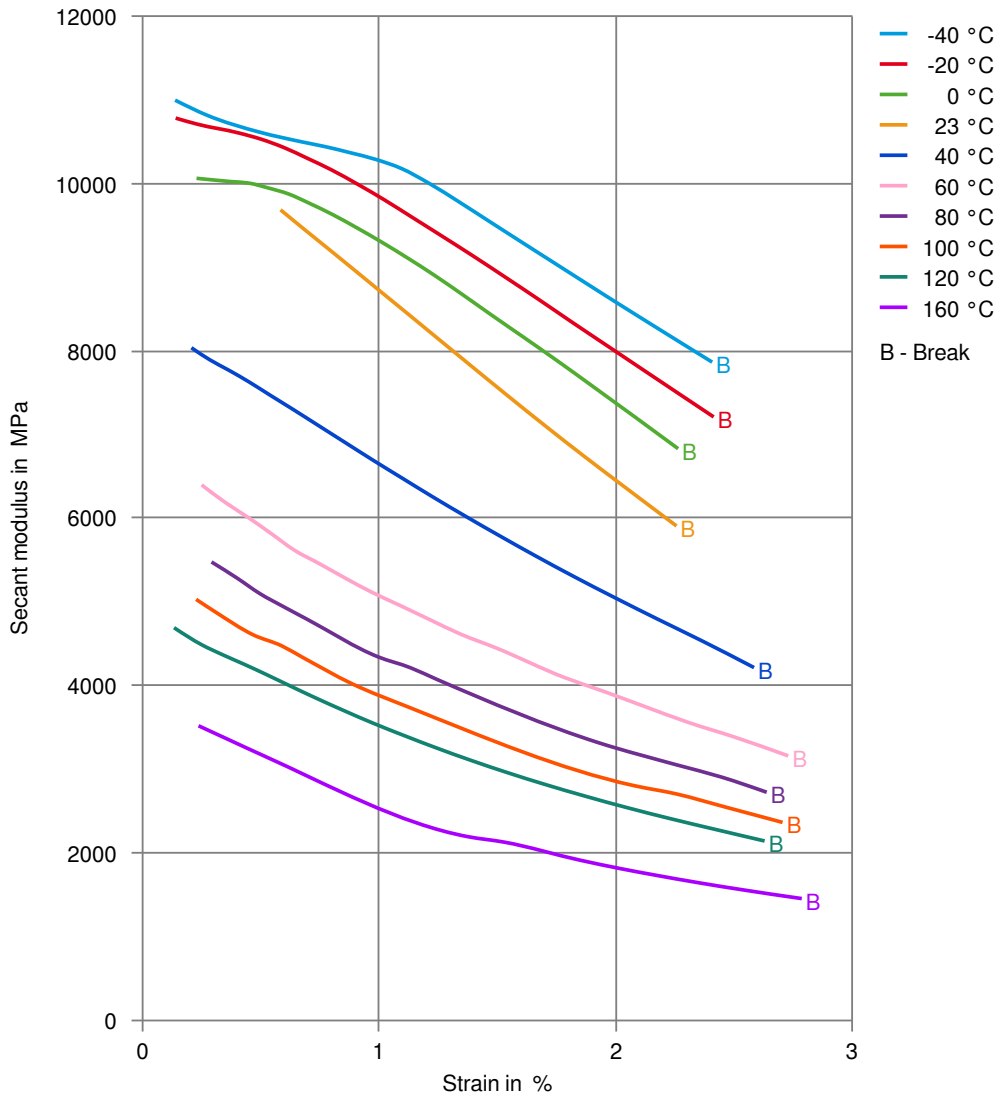
Stress-strain
(measured on Crastin® SK615SF NC010)



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



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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
- ✗ Hydrochloric Acid (36% by mass), 23°C
- ✗ Nitric Acid (40% by mass), 23°C
- ✗ Sulfuric Acid (38% by mass), 23°C
- ✗ Sulfuric Acid (5% by mass), 23°C
- ✗ Chromic Acid solution (40% by mass), 23°C

Bases

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

Standard Fuels

- ✗ ISO 1817 Liquid 1 - E5, 60°C
- ✗ ISO 1817 Liquid 2 - M15E4, 60°C
- ✗ ISO 1817 Liquid 3 - M3E7, 60°C
- ✗ 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
- ✗ 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
- ✗ 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).
- ✗ 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).