Celanese
The chemistry inside innovation™

Crastin® S620F20 BK851

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® S620F20 BK851 is an unreinforced, nucleated, lubricated, medium viscosity polybutylene terephthalate resin for fast injection moulding.

Product information

Resin Identification	PBT	ISO 1043
Part Marking Code	>PBT<	ISO 11469

Rheological properties

Melt mass-flow rate	19	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Intrinsic viscosity	1.03		ISO 307, 1157, 1628

Typical mechanical properties

Tensile Modulus	2600	MPa	ISO 527-1/-2
Yield stress, 50mm/min	59	MPa	ISO 527-1/-2
Yield strain, 50mm/min	8	%	ISO 527-1/-2
Nominal strain at break	30	%	ISO 527-1/-2
Flexural Strength	88	MPa	ISO 178
Charpy notched impact strength, 23°C	4	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	4	kJ/m²	ISO 180/1A
Poisson's ratio	0.38		

Thermal properties

Melting temperature, 10°C/min	225	°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, annealed	60	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	145	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa, annealed	180	°C	ISO 75-1/-2
RTI, electrical, 0.75mm	130	°C	UL 746B
RTI, electrical, 1.5mm	130	°C	UL 746B

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RTI, electrical, 3mm	130	°C	UL 746B
RTI, electrical, 6mm	130	°C	UL 746B
RTI, impact, 0.75mm	115	°C	UL 746B
RTI, impact, 1.5mm	115	°C	UL 746B
RTI, impact, 3mm	115	°C	UL 746B
RTI, impact, 6mm	115	°C	UL 746B
RTI, strength, 0.75mm	120	°C	UL 746B
RTI, strength, 1.5mm	120	°C	UL 746B
RTI, strength, 3mm	120	°C	UL 746B
RTI, strength, 6mm	120	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	UL 94
Thickness tested	1.5	mm	UL 94
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	3	mm	UL 94
UL recognition	yes		UL 94
Glow Wire Flammability Index, 3mm	750	°C	IEC 60695-2-12
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	24	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Comparative tracking index	250		IEC 60112

Other properties

Density	1310	kg/m³	ISO 1183
Density of melt	1100	kg/m³	Internal

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	4	s/mm	
Back pressure	As low as possible	MPa	

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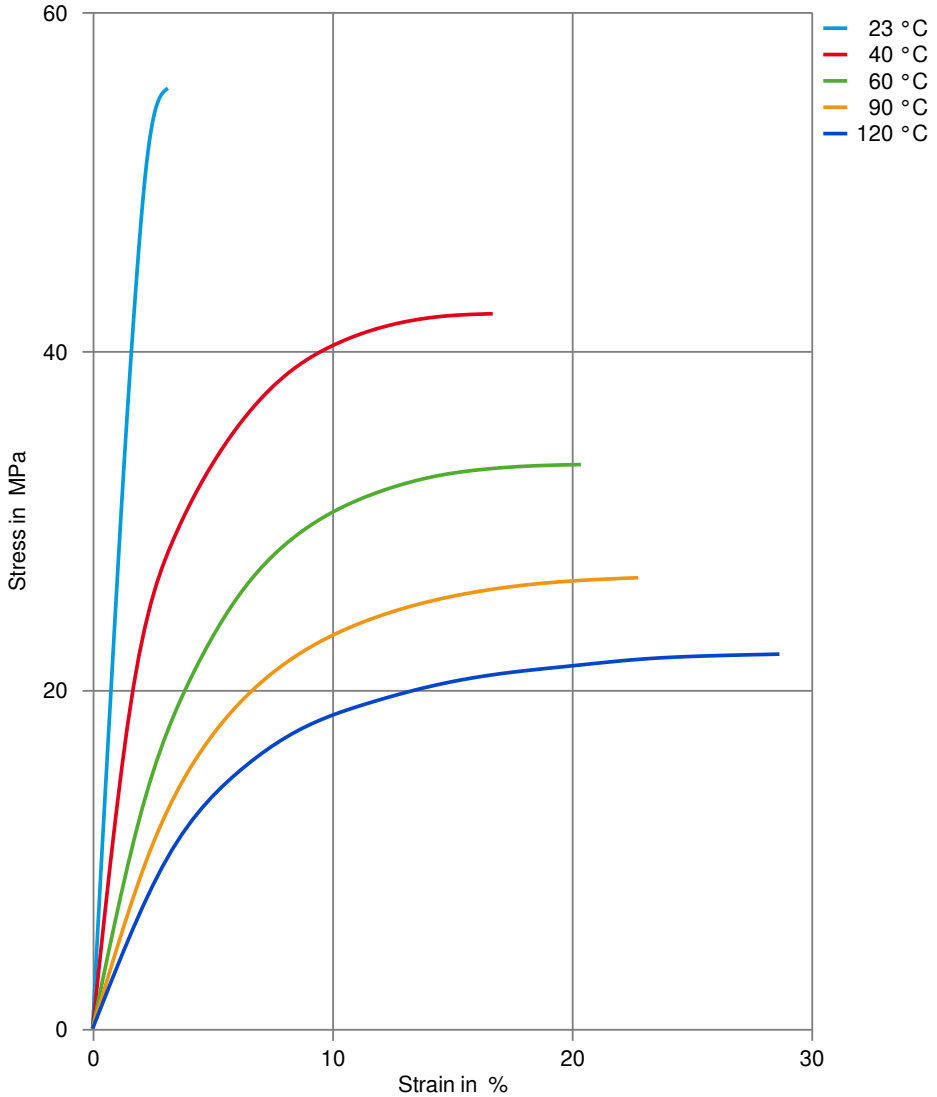
Ejection temperature	170 °C	Internal

Stress-strain
(measured on Crastin® S620F20 NC010)



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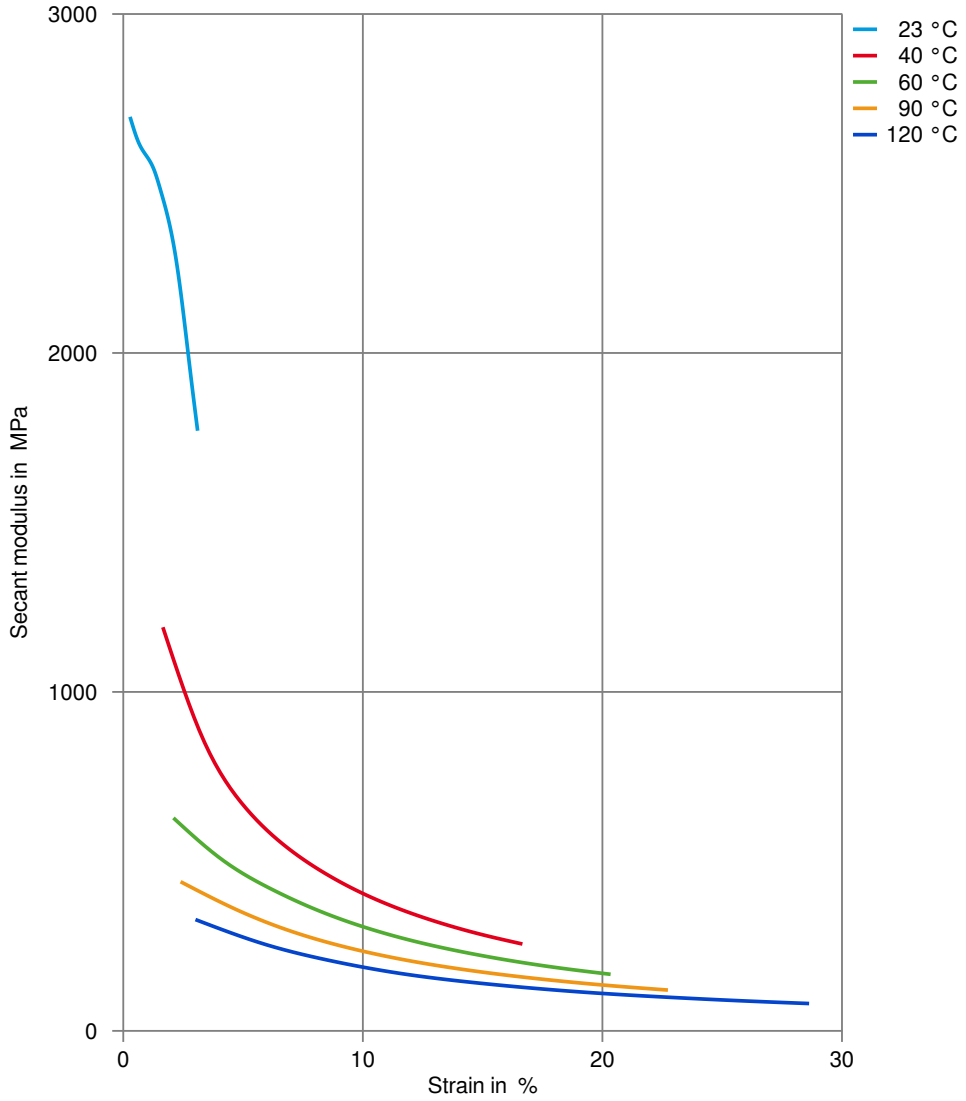
Secant modulus-strain
(measured on Crastin® S620F20 NC010)



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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

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Salt solutions

- ✔ Sodium Chloride solution (10% by mass), 23°C
- ✔ Sodium Hypochlorite solution (10% by mass), 23°C
- ✔ 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
- ✔ 50% Oleic acid + 50% Olive Oil, 23°C
- ✔ Water, 23°C
- ✘ Water, 90°C
- ✔ Phenol solution (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).