Celanese
The chemistry inside innovation™

Crastin® S600F20 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® S600F20 BK851 is an unreinforced, lubricated, medium viscosity polybutylene terephthalate resin for injection moulding.

Product information

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

Rheological properties

Melt volume-flow rate	14	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Melt mass-flow rate	16	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Intrinsic viscosity	1.08		ISO 307, 1628
Moulding shrinkage, parallel	1.7	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.6	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	2500	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	58	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	4	%	ISO 527-1/-2
Nominal strain at break	40	%	ISO 527-1/-2
Tensile strain at break, 50mm/min	>50	%	ISO 527-1/-2
Charpy notched impact strength, 23°C	5	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	4	kJ/m^2	ISO 180/1A
Poisson's ratio	0.38		

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
Temperature of deflection under load, 1.8 MPa	50	°C	ISO 75-1/-2
Temperature of deflection under load, 1.8 MPa, annealed	60	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	135	°C	ISO 75-1/-2

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Temperature 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
RTI, electrical, 3.0mm	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, 3.0mm	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, 3.0mm	120	°C	UL 746B
RTI, strength, 6mm	120	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	3	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Glow Wire Flammability Index, 3.0mm	750	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 3.0mm	725	°C	IEC 60695-2-13
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	24	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 100Hz	3.5		IEC 62631-2-1
Relative permittivity, 1MHz	3.3		IEC 62631-2-1
Dissipation factor, 100Hz	4	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	182	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	40	kV/mm	IEC 60243-1
Comparative tracking index	250		IEC 60112
Comparative tracking index, 100 drops	225		IEC 60112

Physical/Other properties

Density	1310	kg/m³	ISO 1183
Density of melt	1110	kg/m³	

VDA Properties

Thermal desorption analysis of organic emissions	1	µg/g	VDA 278
Odour	3[DS]	class	VDA 270
Fogging, G-value (condensate)	0[DS]	mg	ISO 6452

[DS]: Derived from similar grade

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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	4	s/mm
Back pressure	As low as possible	MPa
Ejection temperature	170	°C

Characteristics

Processing	Injection Moulding
Additives	Release agent

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Ford	WSK-M4D636-A	
Hyundai	MS941-03 Type F-1	
Stellantis	MS.50103 / PBT.2200F.5I	CPN4479 BLACK
Stellantis - Chrysler	MS.50103 / CPN-4479	Black

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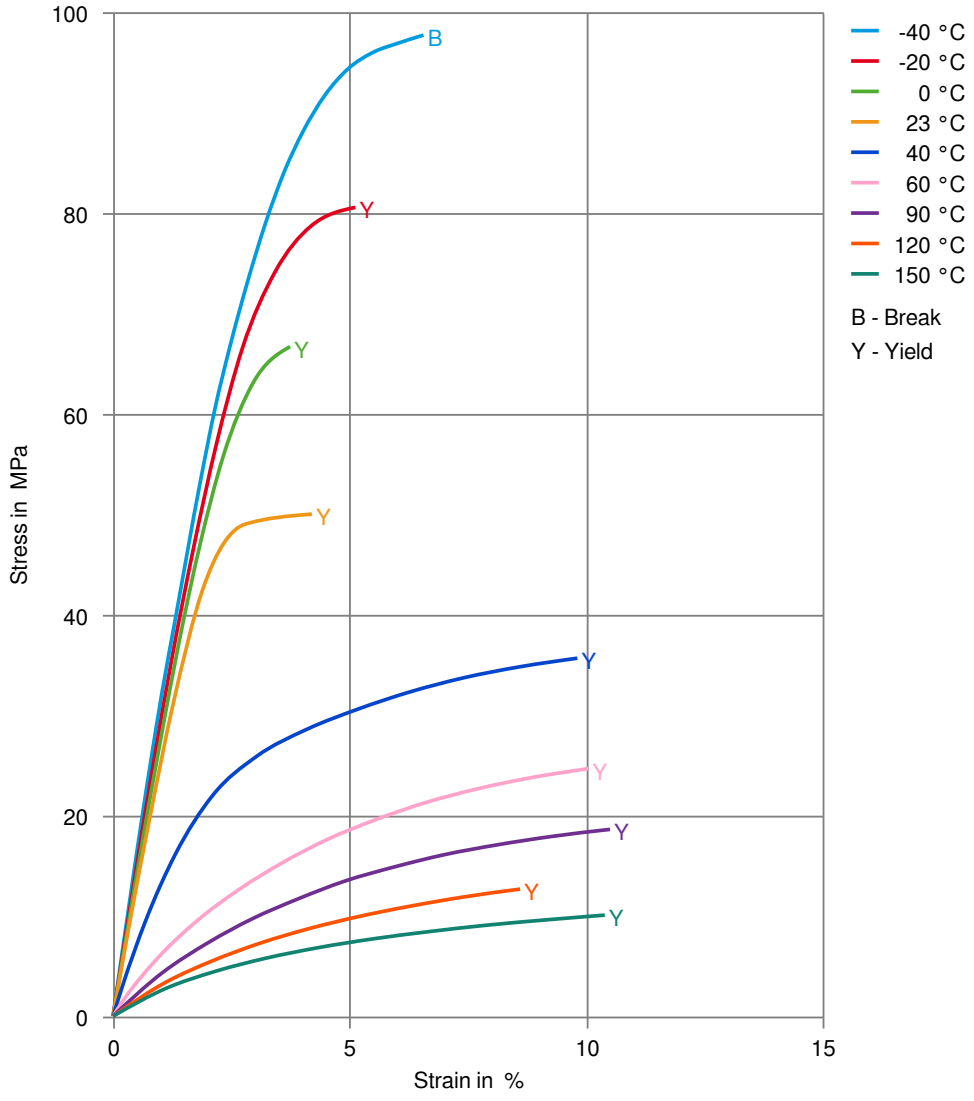
THERMOPLASTIC POLYESTER RESIN

Stress-strain
(measured on Crastin® S600F20 NC010)



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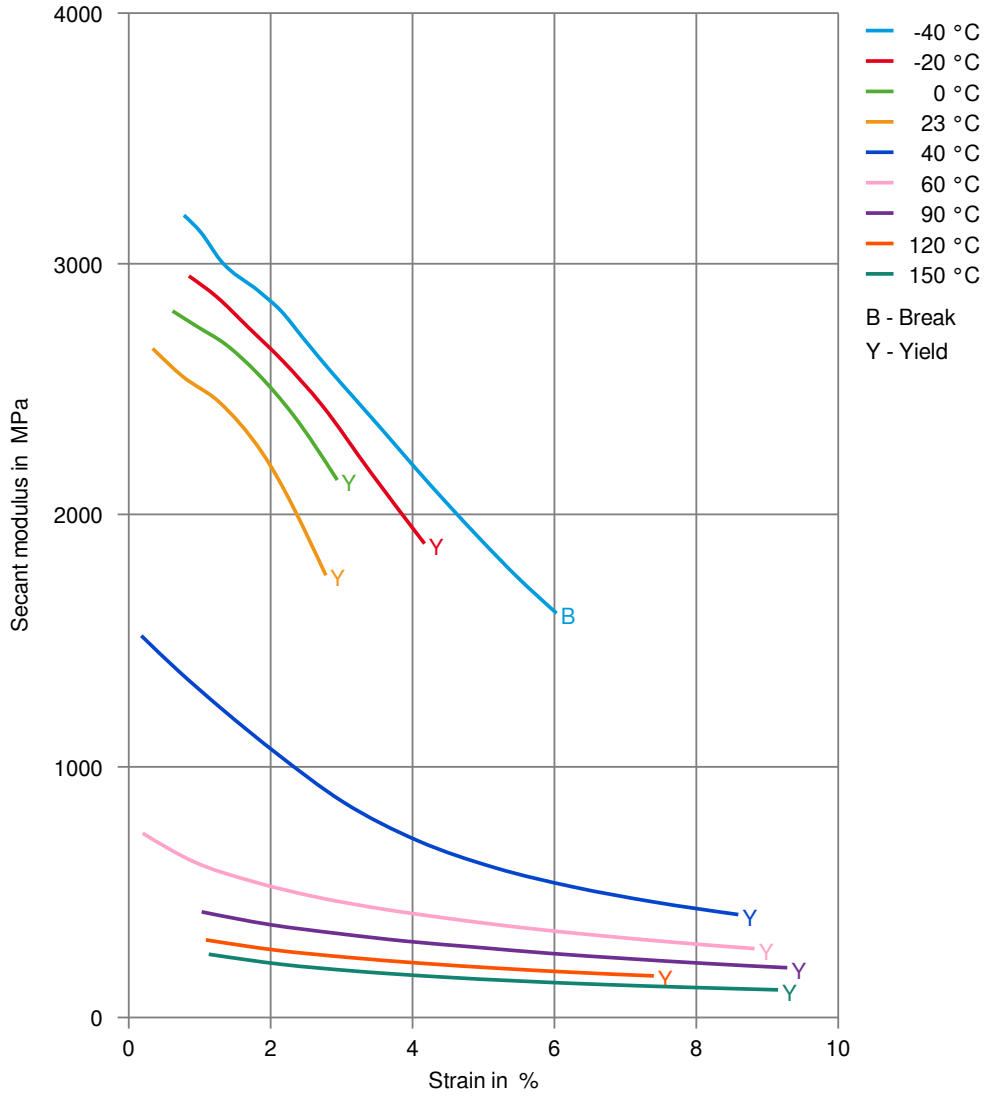
THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain
(measured on Crastin® S600F20 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
- ✔ 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).

Revised: 2025-04-21 Source: Celanese Materials Database