

DuPont™ Crastin® S600F20 BK851

THERMOPLASTIC POLYESTER RESIN

Product Information

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, DuPont recommends, 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.

General information	Value	Unit	Test Standard
Resin Identification	PBT	-	ISO 1043
Part Marking Code	PBT	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Melt mass-flow rate	18	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	ISO 1133
Melt mass-flow rate, Load	2.16	kg	ISO 1133
Moulding shrinkage, parallel	1.7	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.6	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	2500	MPa	ISO 527-1/-2
Yield stress	58	MPa	ISO 527-1/-2
Yield strain	5	%	ISO 527-1/-2
Nominal strain at break	40	%	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	>50	%	ISO 527-1/-2
Poisson's ratio	0.38	-	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
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	224	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	50	°C	
0.45 MPa	140	°C	
0.45 MPa, annealed	180	°C	
1.8 MPa, annealed	60	°C	
RTI, electrical			UL 746B
0.75mm	130	°C	
1.5mm	130	°C	
3mm	130	°C	
6mm	130	°C	
RTI, impact			UL 746B
0.75mm	115	°C	
1.5mm	115	°C	
3mm	115	°C	
6mm	115	°C	

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RTI, strength				UL 746B
0.75mm	120	°C		
1.5mm	120	°C		
3mm	120	°C		
6mm	120	°C		
Flammability	Value	Unit	Test Standard	
Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10	
Thickness tested	1.5	mm	IEC 60695-11-10	
UL recognition	UL	-	UL 94	
Burning Behav. at thickness h	HB	class	IEC 60695-11-10	
Thickness tested	3	mm	IEC 60695-11-10	
UL recognition	UL	-	UL 94	
Glow Wire Flammability Index, 3mm	750	°C	IEC 60695-2-12	
Glow Wire Ignition Temperature, 3mm	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	Value	Unit	Test Standard	
Relative permittivity			IEC 62631-2-1	
100Hz	3.5	-		
1MHz	3.3	-		
Dissipation factor			IEC 62631-2-1	
100Hz	4	E-4		
1MHz	182	E-4		
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	400	-	IEC 60112	
Other properties	Value	Unit	Test Standard	
Density	1310	kg/m ³	ISO 1183	
VDA Properties	Value	Unit	Test Standard	
Emission of organic compounds	290	µgC/g	VDA 277	
Thermal desorption analysis of organic emissions	1	µg/g	VDA 278	
Odour	3	class	VDA 270	DS
Fogging, G-value (condensate)	0	mg	ISO 6452	DS
DS: Derived from similar grade				
Injection	Value	Unit	Test Standard	
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	30	°C	-	
Max. mould temperature	130	°C	-	
Hold pressure range	≥60	MPa	-	
Hold pressure time	4	s/mm	-	
Back pressure	As low as possible		-	
Ejection temperature	170	°C	-	
Characteristics				
Processing	• Injection Moulding			
Regional Availability	• North America	• Asia Pacific	• Near East/Africa	
	• Europe	• South and Central America	• Global	

Revised: 2018-03-12

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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)

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- ✓ 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)
- ✓ 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).

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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