DuPont™ Crastin® FR1300TC BK350 (Preliminary Data)

THERMOPLASTIC POLYESTER RESIN

Product Information				
Crastin® FR1300TC BK350 is a , Flame Retardant, Polybutylene Terephthalate				
General information	Value	Unit	Test Standard	
Resin Identification	PBT-I-CD35FR(17)	-	ISO 1043	
Part Marking Code	PBT-I-CD35FR(17)	-	ISO 11469	
Rheological properties	Value	Unit	Test Standard	
Moulding shrinkage, parallel	0.4	%	ISO 294-4, 2577	
Moulding shrinkage, normal	0.6	%	ISO 294-4, 2577	
Mechanical properties	Value	Unit	Test Standard	
Tensile Modulus	4800	MPa	ISO 527-1/-2	
Stress at break	34	MPa	ISO 527-1/-2	
Strain at break	1	%	ISO 527-1/-2	
Flexural Modulus	6600	MPa	ISO 178	
Flexural Strength	51	MPa	ISO 178	
Poisson's ratio	0.36	-	ISO 527-1/-2	
Charpy impact strength, 23°C	6.8	kJ/m²	ISO 179/1eU	
Charpy notched impact strength, 23°C	2	kJ/m²	ISO 179/1eA	
Thermal properties	Value	Unit	Test Standard	
Temp. of deflection under load			ISO 75-1/-2	
1.8 MPa	119	°C		
0.45 MPa	195	°C		
Coeff. of linear therm. expansion, parallel	46	E-6/K	ISO 11359-1/-2	
Coeff. of linear therm. expansion, normal	53	E-6/K	ISO 11359-1/-2	
Thermal conductivity in plane	14	W/(m K)	ASTM E 1461	
Thermal conductivity through plane	2	W/(m K)	ASTM E 1461	
Flammability	Value	Unit	Test Standard	
Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10	
Thickness tested	1.5	mm	IEC 60695-11-10	
UL recognition	UL	-	UL 94	
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10	
Thickness tested	0.75	mm	IEC 60695-11-10	
UL recognition	UL	-	UL 94	
Glow Wire Flammability Index			IEC 60695-2-12	
0.75mm	960	°C		
1.5mm	960	°C		
3mm	960	°C		
Glow Wire Ignition Temperature			IEC 60695-2-13	
0.75mm	675	°C		
1.5mm	750	°C		
3mm	960	°C		
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)	
Electrical properties	Value	Unit	Test Standard	
Volume resistivity	1000	Ohm*m	IEC 62631-3-1	AMin
AMin: Assessed (Min)				
Other properties	Value	Unit	Test Standard	
Density	1580	kg/m³	ISO 1183	
Injection	Value	Unit	Test Standard	
Drying Recommended	yes	-	-	
Drying Temperature	≥120	°C	-	
Drying Time, Dehumidified Dryer	2 - 4	h	-	
Processing Moisture Content	≤0.04	%	-	
Max. regrind level	15	%	-	
Melt Temperature Optimum	275	°C	-	

To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.

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Min. melt temperature	260	°C	-
Max. melt temperature	290	°C	-
Mold Temperature Optimum	110	°C	-
Min. mould temperature	100	°C	-
Max. mould temperature	120	°C	-
Hold pressure range	≥60	MPa	-
Hold pressure time	3	s/mm	-
Back pressure	As low as possible		-
Ejection temperature	170	°C	-

Characteristics			
Processing	• Injection Moulding		
Delivery form	• Pellets		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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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)
- ✗ Motor oil OS206 304 Ref.Eng.Oil, ISP (135°C)
- ✗ Automatic hypoid-gear oil Shell Donax TX (135°C)
- ✗ Hydraulic oil Pentosin CHF 202 (125°C)

Standard Fuels

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

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✗	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)
✓	Diesel EN 590 (100°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)
✗	Coolant Glysantin G48, 1:1 in water (125°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).

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4.0mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within

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the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents. Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer representative and read Medical Caution H-50103-5.

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