

DuPont™ Crastin® FGS600F10 NC010

THERMOPLASTIC POLYESTER RESIN

Product Information

Crastin® FGS600F10 NC010 is an unreinforced lubricated, high viscosity polybutylene terephthalate resin for extrusion and injection moulding. It has been developed for consideration into applications such as parts for the food industry.

FOOD CONTACT

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. For details, individual compliance statements are available from your DuPont representative.

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	10.1	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	1.7	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	2600	MPa	ISO 527-1/-2
Yield stress	57	MPa	ISO 527-1/-2
Yield strain	4	%	ISO 527-1/-2
Nominal strain at break	>50	%	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	>50	%	ISO 527-1/-2
Flexural Modulus	2400	MPa	ISO 178
Flexural Strength	85	MPa	ISO 178
Poisson's ratio	0.38	-	ISO 527-1/-2
Tensile creep modulus			ISO 899-1
1h	2600	MPa	
1000h	1800	MPa	
Charpy impact strength			ISO 179/1eU
23°C	N	kJ/m ²	
-30°C	N	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23°C	5	kJ/m ²	
-30°C	4	kJ/m ²	
Izod notched impact strength			ISO 180/1A
23°C	5	kJ/m ²	
-30°C	5	kJ/m ²	
Izod impact strength			ISO 180/1U
23°C	N	kJ/m ²	
-30°C	130	kJ/m ²	
Ball indentation hardness, H 358/30	139	MPa	ISO 2039-1
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	223	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	55	°C	ISO 11357-1/-2
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	50	°C	
0.45 MPa	115	°C	
0.45 MPa, annealed	180	°C	
1.8 MPa, annealed	60	°C	

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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Vicat softening temperature, 50°C/h, 50N	175	°C	ISO 306
Ball pressure test	190	°C	IEC 60309
Coeff. of linear therm. expansion, parallel	110	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	120	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.21	W/(m K)	-
Spec. heat capacity of melt	2100	J/(kg K)	-
Flammability	Value	Unit	Test Standard
Glow Wire Flammability Index, 3mm	750	°C	IEC 60695-2-12
FMVSS Class	SE/NBR	-	ISO 3795 (FMVSS 302)
Other properties	Value	Unit	Test Standard
Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.5	%	Sim. to ISO 62
Density	1300	kg/m ³	ISO 1183
Density of melt	1110	kg/m ³	-
VDA Properties	Value	Unit	Test Standard
Odour	3	class	VDA 270
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	<ul style="list-style-type: none"> • Injection Moulding • Profile Extrusion 	<ul style="list-style-type: none"> • Other Extrusion • Coatable
Delivery form	<ul style="list-style-type: none"> • Pellets 	
Additives	<ul style="list-style-type: none"> • Release agent 	
Regional Availability	<ul style="list-style-type: none"> • North America • Europe 	<ul style="list-style-type: none"> • Asia Pacific • South and Central America • Near East/Africa • Global

Processing Texts

Profile extrusion

PREPROCESSING

Drying recommended = Yes
 Drying temperature = 110-130°C
 Drying time, dehumidified dryer = 2-4 h
 Processing moisture content = <0.04 %

PROCESSING

Melt temperature optimum = 250°C
 Melt temperature range = 240-260°C

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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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