

DuPont™ Crastin® ST830FRUV NC010

THERMOPLASTIC POLYESTER RESIN

Product Information

ISO 1043: PBT-HIFR(17)

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® ST830FRUV NC010 is an unreinforced, Super Tough, flame retardant polybutylene terephthalate resin for injection moulding. It contains a UV light stabilizer and is recognized as UL94V-0 at 0.85mm (0.033in).

General information	Value	Unit	Test Standard
Resin Identification	PBT-HIFR(17)	-	-
Part Marking Code	>PBT-HIFR(17)<	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Moulding shrinkage, parallel	2.0	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.6	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	2200	MPa	ISO 527-1/-2
Yield stress	40	MPa	ISO 527-1/-2
Yield strain	9	%	ISO 527-1/-2
Nominal strain at break	45	%	ISO 527-1/-2
Flexural Modulus	2100	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
23 °C	N	kJ/m ²	
-30 °C	350	kJ/m ²	
-40 °C	350	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23 °C	65	kJ/m ²	
-30 °C	10	kJ/m ²	
-40 °C	10	kJ/m ²	
Izod notched impact strength			ISO 180/1A
23 °C	70	kJ/m ²	
-30 °C	10	kJ/m ²	
-40 °C	10	kJ/m ²	
Izod impact strength			ISO 180/1U
23 °C	N	kJ/m ²	
-30 °C	220	kJ/m ²	
-40 °C	220	kJ/m ²	
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10 °C/min	225	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	55	°C	
0.45 MPa	125	°C	
Coeff. of linear therm. expansion, parallel	190	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	190	E-6/K	ISO 11359-1/-2

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

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RTI, electrical, 0.8mm	130	°C	UL 746B
RTI, impact, 0.8mm	130	°C	UL 746B
RTI, strength, 0.8mm	130	°C	UL 746B
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	-	-
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.8	mm	IEC 60695-11-10
Electrical properties	Value	Unit	Test Standard
Comparative tracking index	600	-	IEC 60112
Other properties	Value	Unit	Test Standard
Density	1370	kg/m ³	ISO 1183
Density of melt	1170	kg/m ³	-

Characteristics

Processing	• Injection Moulding	
Special characteristics	• Light stabilised or stable to light	• U.V. stabilised or stable to weather
Regional Availability	• North America	• South and Central America

Processing Texts

Injection molding

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
Mould temperature optimum = 80°C
Mould temperature range = 30-130°C

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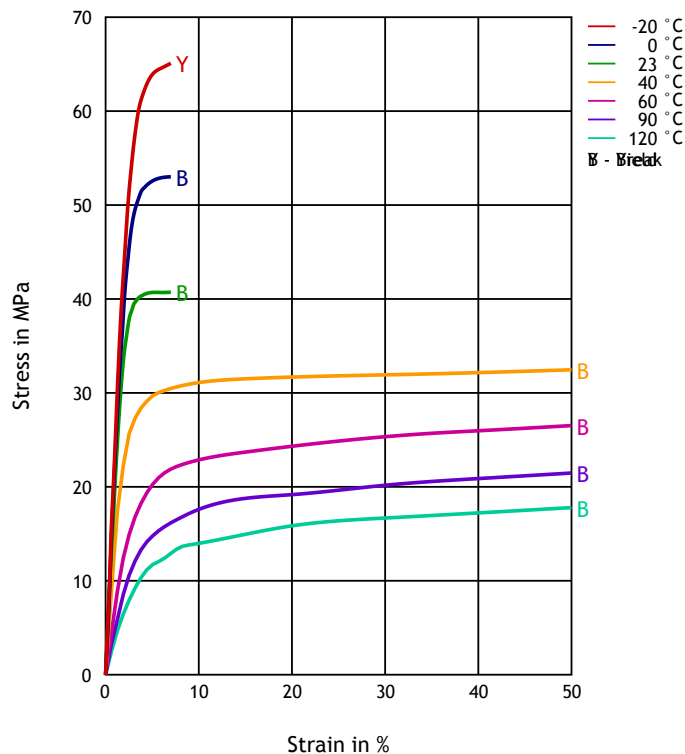


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Diagrams

Stress-strain



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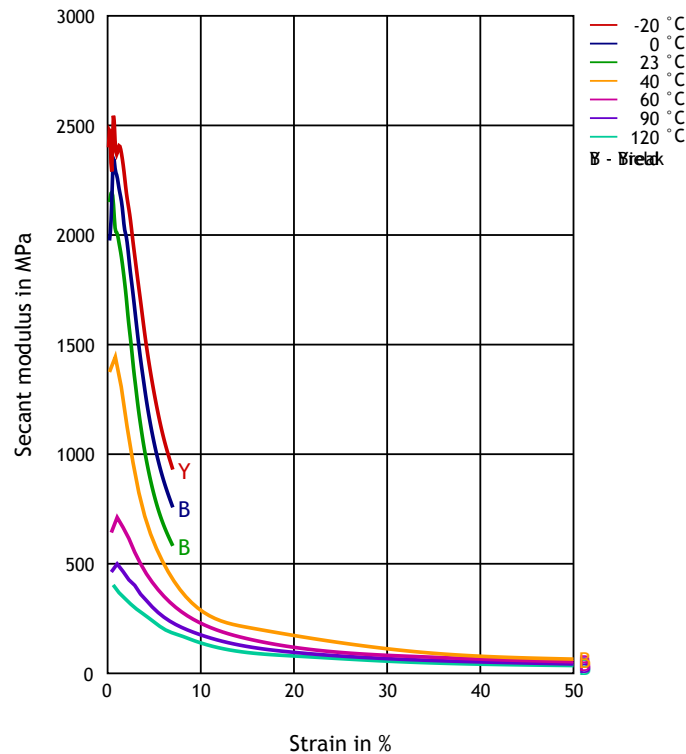
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Secant modulus-strain



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)



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- ✓ 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 (60°C)
- ✗ ISO 1817 Liquid 2 (60°C)
- ✗ ISO 1817 Liquid 3 (60°C)
- ✗ ISO 1817 Liquid 4 (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)
- ✓ 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)




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-  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 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.

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