

DuPont™ Crastin® SC193 NC010

THERMOPLASTIC POLYESTER RESIN

Product Information

Crastin® SC193 NC010 (Complete Data) is a 30% Glass Reinforced Polybutylene Terephthalate Blend Developed for Healthcare Industry

General information	Value	Unit	Test Standard
Resin Identification	PBT+SAN-GF30	-	ISO 1043
Part Marking Code	PBT+SAN-GF30	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Moulding shrinkage, parallel	0.3	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	9500	MPa	ISO 527-1/-2
Stress at break	130	MPa	ISO 527-1/-2
Strain at break	2.5	%	ISO 527-1/-2
Poisson's ratio	0.34	-	ISO 527-1/-2
Tensile creep modulus			ISO 899-1
1h	9000	MPa	
1000h	7300	MPa	
Charpy impact strength			ISO 179/1eU
23°C	60	kJ/m ²	
-30°C	66	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23°C	10	kJ/m ²	
-30°C	9	kJ/m ²	
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	120	°C	ISO 11357-1/-2
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	180	°C	
8 MPa	97	°C	
Vicat softening temperature, 50°C/h, 50N	150	°C	ISO 306
Coeff. of linear therm. expansion, parallel	25	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.26	W/(m K)	-
Spec. heat capacity of melt	1900	J/(kg K)	-
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
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	6	mm	IEC 60695-11-10
Oxygen index	19	%	ISO 4589-1/-2
Electrical properties	Value	Unit	Test Standard
Relative permittivity			IEC 62631-2-1
100Hz	3.8	-	
1MHz	3.6	-	
Dissipation factor			IEC 62631-2-1
100Hz	30	E-4	
1MHz	170	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	36	kV/mm	IEC 60243-1
Comparative tracking index	550	-	IEC 60112
Other properties	Value	Unit	Test Standard
Humidity absorption, 2mm	0.25	%	Sim. to ISO 62
Water absorption, 2mm	0.7	%	Sim. to ISO 62

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Density	1440	kg/m ³	ISO 1183
Density of melt	1280	kg/m ³	-
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	3	s/mm	-
Back pressure	As low as possible		-
Ejection temperature	170	°C	-

Characteristics

Processing	• Injection Moulding
Delivery form	• Pellets

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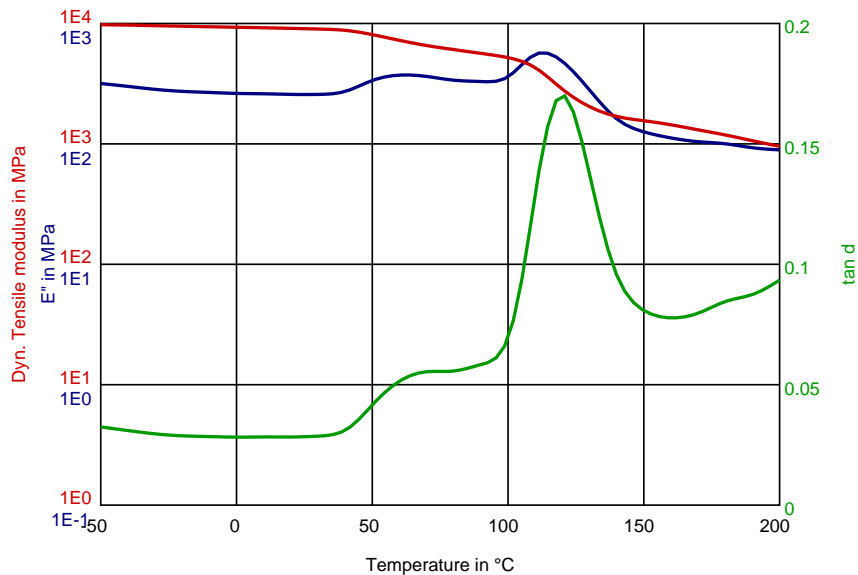


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Diagrams

Dynamic Tensile modulus-temperature



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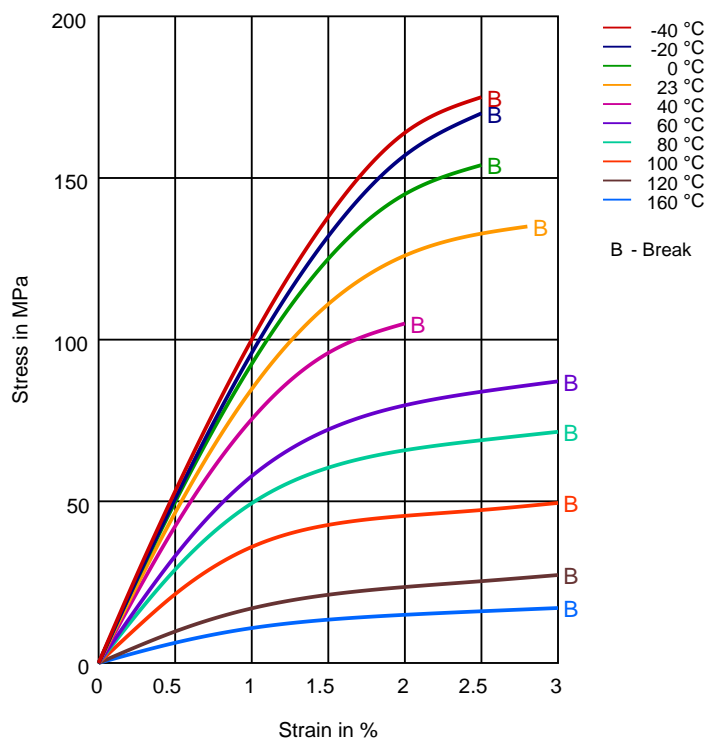


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THERMOPLASTIC POLYESTER RESIN

Stress-strain



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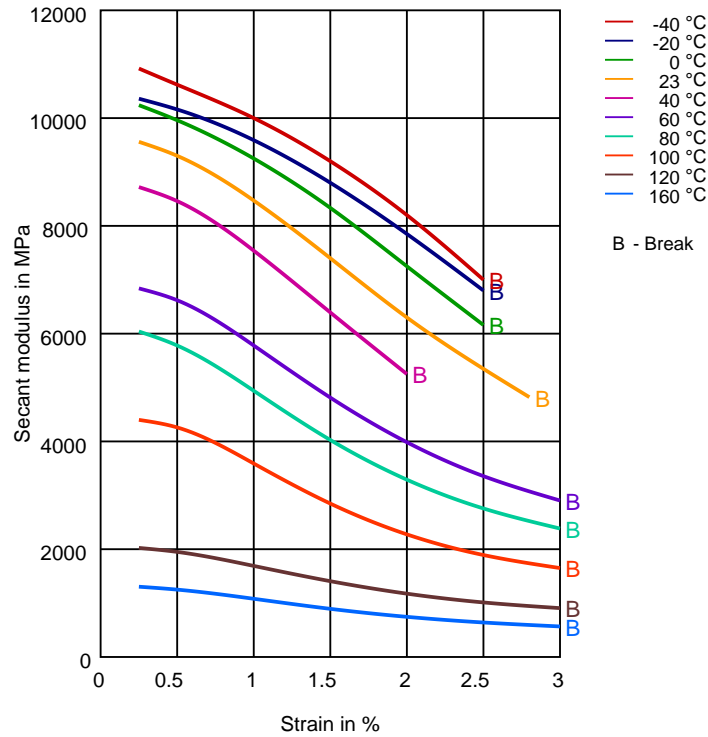
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THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain



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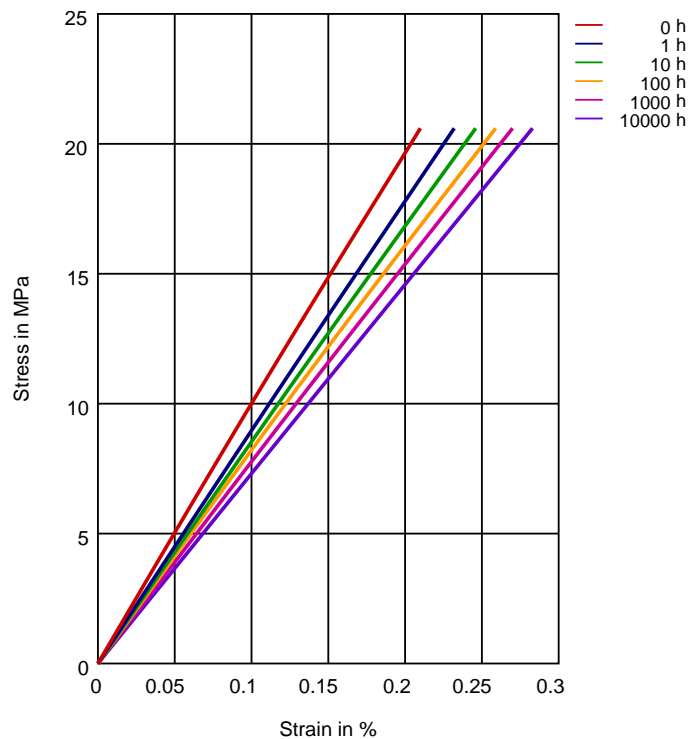
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THERMOPLASTIC POLYESTER RESIN

Stress-strain (isochronous) 23°C



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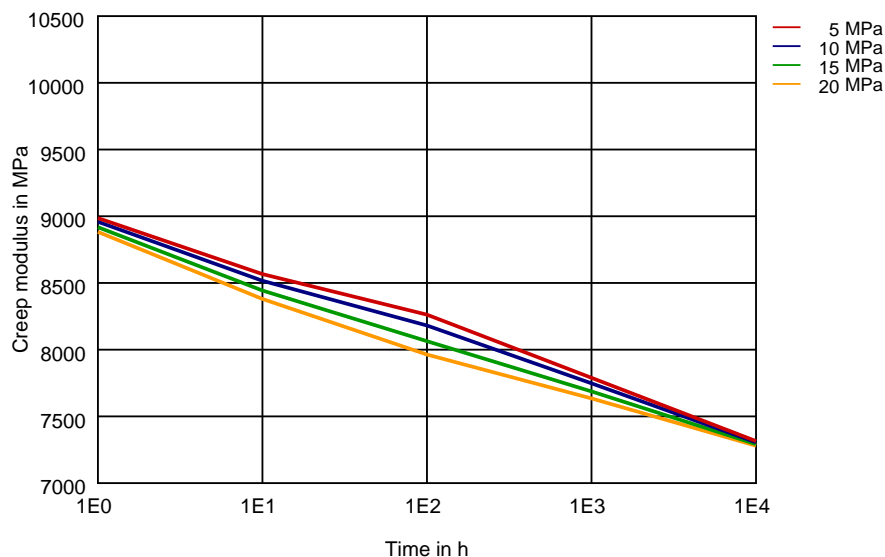
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THERMOPLASTIC POLYESTER RESIN

Creep modulus-time 23 °C



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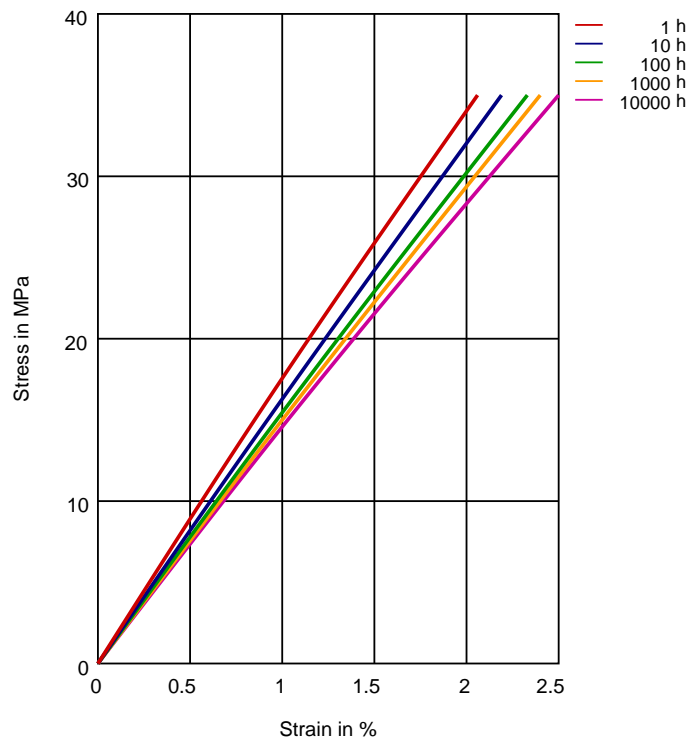
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THERMOPLASTIC POLYESTER RESIN

Stress-strain (isochronous) 120°C



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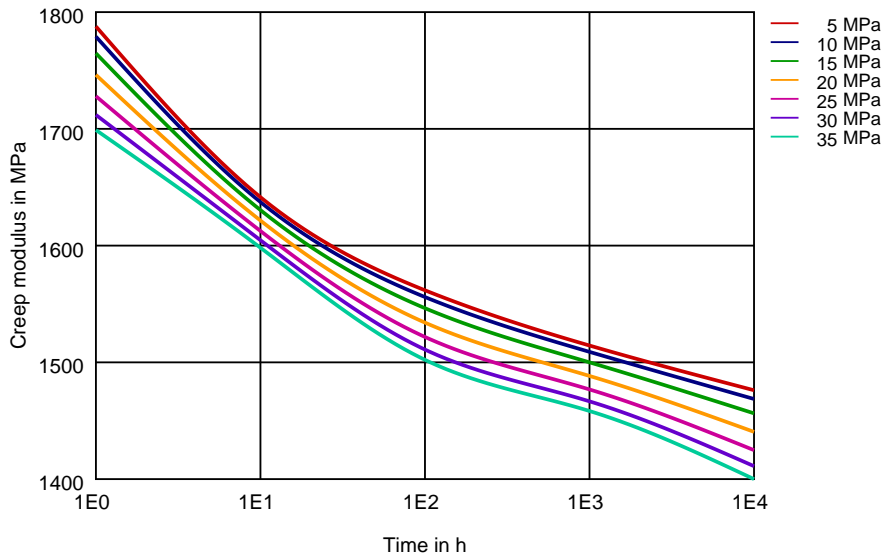
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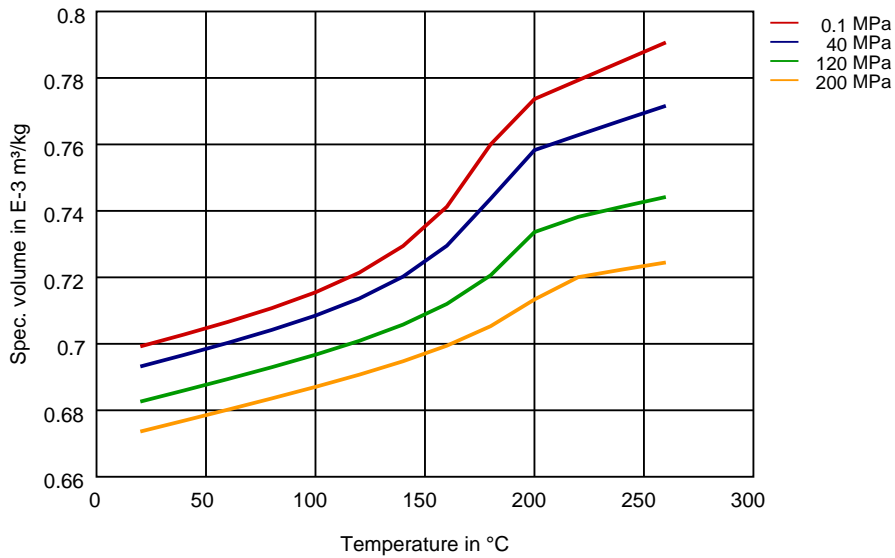
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Creep modulus-time 120°C



Specific volume-temperature (pvT)



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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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