



ISO 1043

ISO 527-1/-2

ISO 527-1/-2

ISO 527-1/-2

ISO 179/1eA

ISO 179/1eA

ISO 180/1A

Crastin® 6130 NC010

THERMOPLASTIC POLYESTER RESIN

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, we recommend, 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.

PBT

5 %

50 %

110 %

0.38

5 kJ/m²

4 kJ/m²

4.5 kJ/m²

Crastin® 6130 NC010 is an unreinforced, medium high viscosity polybutylene terephthalate resin for extrusion and injection moulding.

Product information

Resin Identification

Part Marking Code	>PBT<		ISO 11469
Rheological properties			
Melt volume-flow rate	14	cm ³ /10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Melt mass-flow rate	16	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Viscosity number	130	cm ³ /g	ISO 307, 1628
Intrinsic viscosity	1.1		ISO 307, 1628
Moulding shrinkage, parallel	1.7	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.7	%	ISO 294-4, 2577
Postmoulding shrinkage, normal, 48h at 80°C	0.5	%	ISO 294-4
Postmoulding shrinkage, parallel, 48h at 80°C	0.4	%	ISO 294-4
Typical mechanical properties			
Tensile modulus	2600	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	59	MPa	ISO 527-1/-2

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Tensile strain at yield, 50mm/min

Tensile strain at break, 50mm/min

Izod notched impact strength, 23°C

Charpy notched impact strength, 23°C

Charpy notched impact strength, -30°C

Nominal strain at break

Poisson's ratio





THERMOPLASTIC POLYESTER RESIN

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Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	55	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	50	°C	ISO 75-1/-2
Temperature of deflection under load, 1.8 MPa,	60	°C	ISO 75-1/-2
annealed			
Temperature of deflection under load, 0.45 MPa	115	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa,	180	°C	ISO 75-1/-2
annealed			
Coefficient of linear thermal expansion	108	E-6/K	ISO 11359-1/-2
(CLTE), parallel			
Coefficient of linear thermal expansion (CLTE),	144	E-6/K	ISO 11359-1/-2
normal			
Thermal conductivity of melt		W/(m K)	ISO 22007-2
Specific heat capacity of melt	2050	J/(kg K)	ISO 22007-4
RTI, electrical, 0.75mm		°C	UL 746B
RTI, electrical, 1.5mm	75	°C	UL 746B
RTI, electrical, 3.0mm	75	°C	UL 746B
RTI, impact, 0.75mm	75	°C	UL 746B
RTI, impact, 1.5mm	75	°C	UL 746B
RTI, impact, 3.0mm	75	°C	UL 746B
RTI, strength, 0.75mm	75	°C	UL 746B
RTI, strength, 1.5mm	75	°C	UL 746B
RTI, strength, 3.0mm	75	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	НВ	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.81	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Oxygen index	22	%	ISO 4589-1/-2
FMVSS Class	В		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 1MHz	3.2	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Electric strength	26 kV/mm	IEC 60243-1
Comparative tracking index	600	IEC 60112

Physical/Other properties

Density	1300 kg/m ³	ISO 1183
Density of melt	1110 kg/m³	

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VDA Properties

Fogging, G-value (condensate)

0.1 mg ISO 6452

Injection

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	60	°C
Max. mould temperature	130	°C
Hold pressure range	≥60	MPa
Hold pressure time	4	s/mm
Back pressure	As low as	MPa
	possible	
Ejection temperature	170	°C

Extrusion

Drying Temperature	110 - 130	$^{\circ}\mathrm{C}$
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.04	%
Melt Temperature Optimum	250	°C
Melt Temperature Range	240 - 260	°C

Characteristics

Processing Injection Moulding, Extrusion, Sheet Extrusion, Other Extrusion, Coatable
Delivery form Pellets

Additional information

Injection molding

To minimize the volatile content in the final product, dry the resin to ≤0.01% water content. In injection molding, use the lowest possible melt temperature (recommended 240 °C) and shortest feasible residence time (recommended 2-3 minutes). Store the parts in a ventilated, clean area before use. If assistance is needed please contact your Celanese account representative.

These recommendations are based on internal Celanese testing. For drying and injection molding conditions outside the above parameters, customer must test for and verify suitably low volatiles emissions on molded articles to confirm the final product is suitably pure for its intended use.

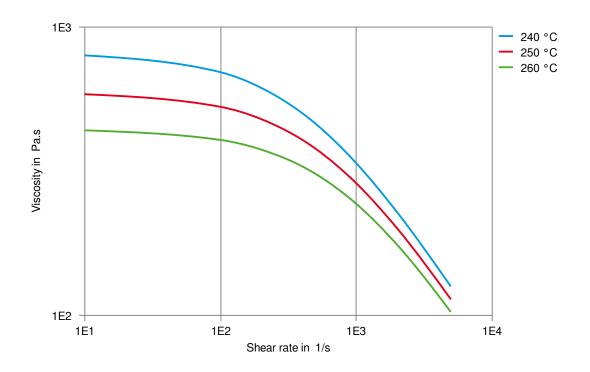
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Viscosity-shear rate



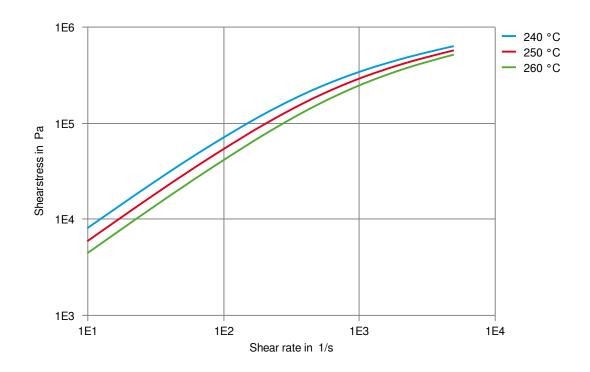
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THERMOPLASTIC POLYESTER RESIN

Shearstress-shear rate



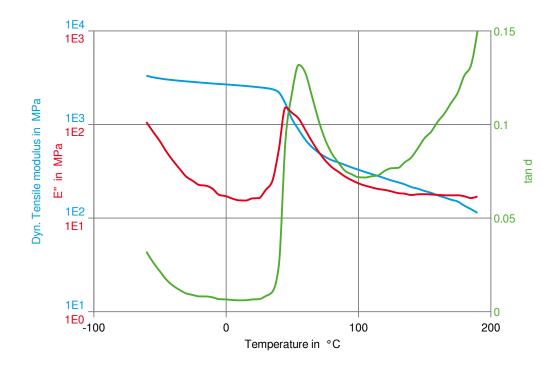
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THERMOPLASTIC POLYESTER RESIN

Dynamic Tensile modulus-temperature (measured on Crastin® S600F20 NC010)



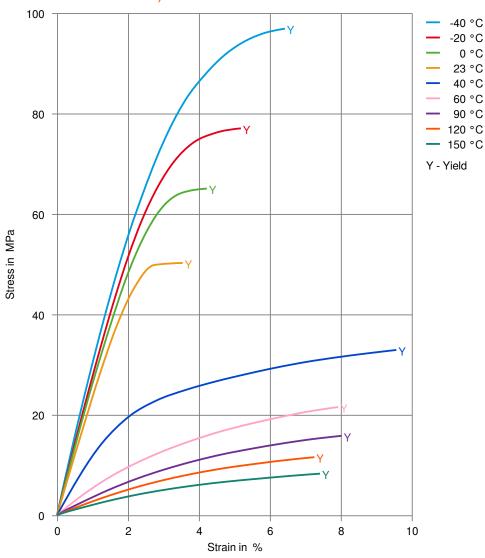
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THERMOPLASTIC POLYESTER RESIN

Stress-strain (measured on Crastin® 6129 NC010)



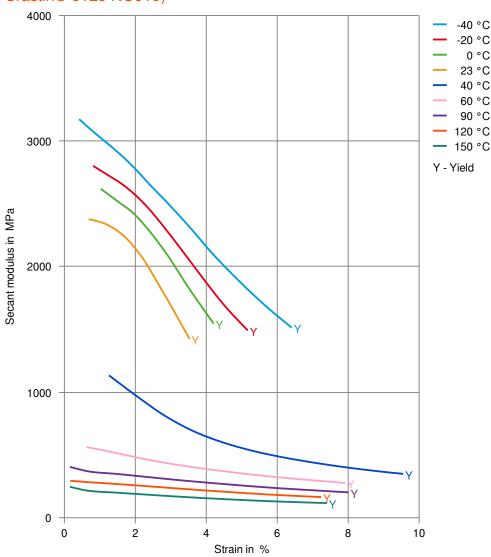
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THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain (measured on Crastin® 6129 NC010)



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Crastin® 6130 NC010

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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
- X Hydrochloric Acid (36% by mass), 23°C
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- X Sulfuric Acid (5% by mass), 23°C
- X Chromic Acid solution (40% by mass), 23°C

Bases

- X 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
- X SAE 10W40 multigrade motor oil, 130°C
- X SAE 80/90 hypoid-gear oil, 130°C
- ✓ Insulating Oil, 23°C

Standard Fuels

- X ISO 1817 Liquid 1 E5, 60°C
- X ISO 1817 Liquid 2 M15E4, 60°C
- X ISO 1817 Liquid 3 M3E7, 60°C
- X ISO 1817 Liquid 4 M15, 60°C
- X Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- X 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

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- ✓ 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
- X Hydrogen peroxide, 23°C
- X 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
- X 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).

x 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).

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