Product Information

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

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	15	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	ISO 1133
Melt mass-flow rate, Load	2.16	kg	ISO 1133
Viscosity number	130	cm³/g	ISO 307, 1157, 1628
Molding shrinkage, parallel	1.7	%	ISO 294-4, 2577
Molding shrinkage, normal	1.7	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	2600	MPa	ISO 527-1/-2
Yield stress	59	MPa	ISO 527-1/-2
Yield strain	8	%	ISO 527-1/-2
Nominal strain at break	50	%	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	110	%	ISO 527-1/-2
Charpy notched impact strength			ISO 179/1eA
73°F	5	kJ/m²	
-22°F	4.5	kJ/m²	
Izod notched impact strength, 73°F	4	kJ/m²	ISO 180/1A
Thermal properties	Value	Unit	Test Standard
Melting temperature, 18°F/min	225	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	50	°C	
65 psi	115	°C	
65 psi, annealed	180	°C	
260 psi, annealed	60	°C	
Coeff. of linear therm. expansion, parallel	108	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	144	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt		W/(m K)	-
Spec. heat capacity of melt	2050	J/(kg K)	-
RTI, electrical		- ()	UL 746B
30mil	75	°C	
60mil	75	°C	
120mil	75	°Č	
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RTI, impact				UL 746B	
30mil		75	°C		
60mil		75	°C		
120mil		75	°C		
RTI, strength				UL 746B	
30mil		75	°C		
60mil		75	°C		
120mil		75	°C		
Flammability		Value	Unit	Test Standard	
Burning Behav. at 60mil nom. thickn.		HB	class	IEC 60695-11-10	
Thickness tested		1.5	mm	IEC 60695-11-10	
UL recognition		yes	-	UL 94	
Burning Behav. at thickness h		НВ	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		<100	mm/min	ISO 3795 (FMVSS 302)	
Electrical properties		Value		Test Standard	
Relative permittivity, 1MHz		3.2		IEC 60250	
Volume resistivity		>1E13		IEC 60093	
Electric strength			kV/mm	IEC 60243-1	
Comparative tracking index		600	-	IEC 60112	
Other properties		Value		Test Standard	
Density		1300		ISO 1183	
Density Density of melt		1110		130 1103	
VDA Properties		Value		Test Standard	
				ISO 6452	
Fogging, G-value (condensate)		0.1 Value	mg Unit	Test Standard	
Injection Drying Recommended			-	-	
		yes 120	°C	<u> </u>	
Drying Temperature		2 - 4		-	
Drying Time, Dehumidified Dryer				-	
Processing Moisture Content		≤0.04		-	
Melt Temperature Optimum		250	°C	<u>-</u>	
Min. melt temperature		240	°C	-	
Max. melt temperature		260	°C	<u>-</u>	
Mold Temperature Optimum		80	°C	-	
Min. mold temperature		30	°C	-	
Max. mold temperature		130	°C	-	
Hold pressure range		≥60	MPa	-	
Hold pressure time		4	s/mm	-	
Back pressure		As low as possible		-	
Ejection temperature		170	°C	-	
Extrusion		Value		Test Standard	
Drying Temperature		110 - 130	°C	-	
Drying Time, Dehumidified Dryer		2 - 4		-	
Processing Moisture Content		≤0.04		-	
Melt Temperature Optimum		250	°C	-	
Melt Temperature Range		240 - 260	°C	-	
Characteristics					
Processing	Injection MoldingProfile Extrusion		eet Extrusion her Extrusion	 Coating 	
Delivery form	• Pellets				
Pagional Availability	North America	• Sou	South and Central America		
Regional Availability	 Europe 	• Ne	Near East/Africa		

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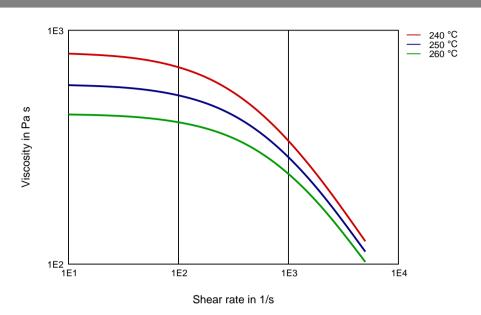
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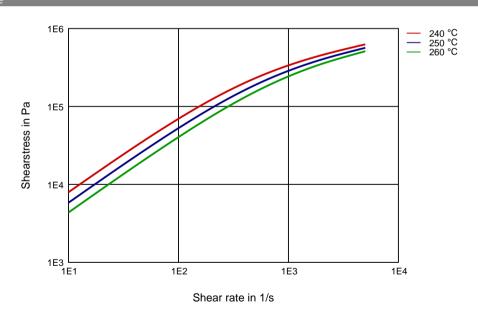


Diagrams

Viscosity-shear rate



Shearstress-shear rate



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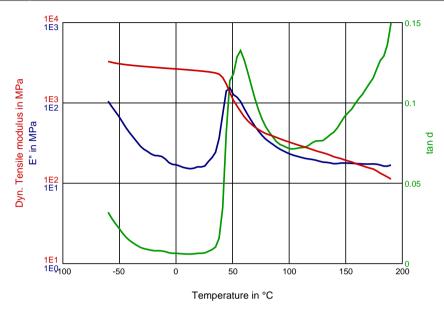
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Dynamic Tensile modulus-temperature (measured on Crastin® S600F20 NC010)



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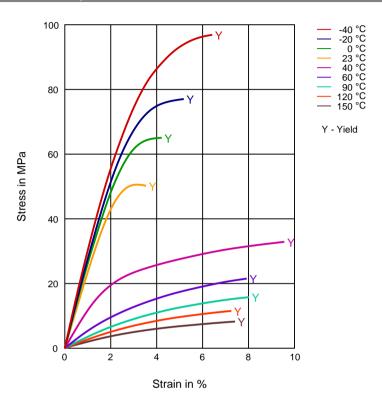
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Stress-strain (measured on Crastin® 6129 NC010)



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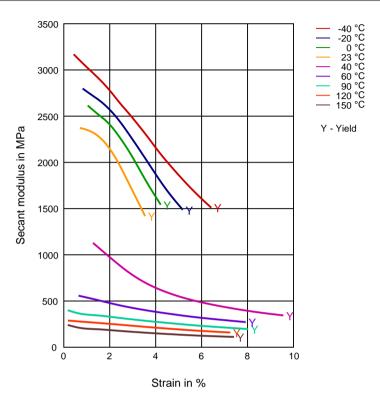
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Secant modulus-strain (measured on Crastin® 6129 NC010)



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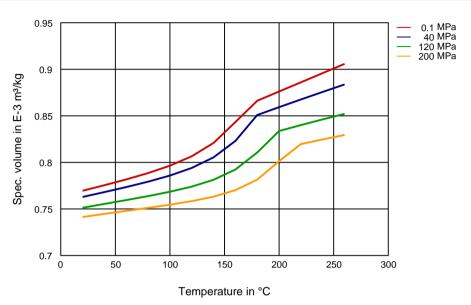
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Specific volume-temperature (pvT)



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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)

Trydrocitionic Acid (30% 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)

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 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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