

# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

### Product Information

Common features of 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® LW9030FR NC010 is a 30% glass fiber reinforced, flame retardant polybutylene terephthalate blend for injection molding. It has improved surface aesthetics, excellent dimensional stability and low warpage characteristics.**

Product information	Value	Unit	Test Standard
Resin Identification	PBT+ASA- GF30FR(17)	-	ISO 1043
Part Marking Code	PBT+ASA- GF30FR(17)	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	10500	MPa	ISO 527-1/-2
Stress at break	125	MPa	ISO 527-1/-2
Strain at break	1.8	%	ISO 527-1/-2
Flexural Strength	175	MPa	ISO 178
Tensile creep modulus			ISO 899-1
1h	9500	MPa	
1000h	7400	MPa	
Charpy impact strength			ISO 179/1eU
73°F	40	kJ/m <sup>2</sup>	
-22°F	40	kJ/m <sup>2</sup>	
Charpy notched impact strength			ISO 179/1eA
73°F	8	kJ/m <sup>2</sup>	
-22°F	8	kJ/m <sup>2</sup>	
Izod notched impact strength			ISO 180/1A
73°F	7	kJ/m <sup>2</sup>	
-22°F	7	kJ/m <sup>2</sup>	
Izod impact strength			ISO 180/1U
73°F	35	kJ/m <sup>2</sup>	
-22°F	35	kJ/m <sup>2</sup>	
Thermal properties	Value	Unit	Test Standard
Melting temperature, 18°F/min	224	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	190	°C	
65 psi	220	°C	
Vicat softening temperature, 90°F/h, 11 lbf	150	°C	ISO 306
Coeff. of linear therm. expansion, parallel	25	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	80	E-6/K	ISO 11359-1/-2

Revised: 2019-03-22

Page: 1 of 9

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

#### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

#### Asia Pacific

Tel: +81 3 5521 8600

#### Europe/Middle East/Africa

Tel: +41 22 717 51 11



# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

Thermal conductivity of melt	0.26	W/(m K)	-
Spec. heat capacity of melt	1850	J/(kg K)	-
RTI, electrical			UL 746B
30mil	140	°C	
60mil	140	°C	
120mil	140	°C	
240mil	140	°C	
RTI, impact			UL 746B
30mil	125	°C	
60mil	125	°C	
120mil	130	°C	
240mil	130	°C	
RTI, strength			UL 746B
30mil	130	°C	
60mil	130	°C	
120mil	140	°C	
240mil	140	°C	
<b>Flammability</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Burning Behav. at 60mil nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.75	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	3	mm	IEC 60695-11-20
UL recognition	yes	-	UL 94
Oxygen index	27	%	ISO 4589-1/-2
Glow Wire Flammability Index, 120mil	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			
15mil	775	°C	IEC 60695-2-12
30mil	775	°C	IEC 60695-2-13
40mil	800	°C	IEC 60695-2-13
60mil	800	°C	IEC 60695-2-13
80mil	800	°C	IEC 60695-2-13
120mil	875	°C	IEC 60695-2-13
Glow Wire Temperature, No Flame			IEC 60335-1
40mil	750	°C	
80mil	775	°C	
120mil	850	°C	
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
<b>Electrical properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Relative permittivity			IEC 62631-2-1
100Hz	3.9	-	
1MHz	3.6	-	
Dissipation factor			IEC 62631-2-1
100Hz	25.5	E-4	
1MHz	150	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	28	kV/mm	IEC 60243-1
Comparative tracking index	400	-	IEC 60112
Electric Strength, Short Time			IEC 60243-1
1mm	28	kV/mm	
2mm	20	kV/mm	

Revised: 2019-03-22

Page: 2 of 9

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

### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

### Asia Pacific

Tel: +81 3 5521 8600

### Europe/Middle East/Africa

Tel: +41 22 717 51 11



Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

Other properties	Value	Unit	Test Standard
Humidity absorption, 80mil	0.21	%	Sim. to ISO 62
Water absorption, 80mil	0.72	%	Sim. to ISO 62
Density	1570	kg/m <sup>3</sup>	ISO 1183
Density of melt	1420	kg/m <sup>3</sup>	-
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. mold temperature	30	°C	-
Max. mold 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 Molding		
Delivery form	• Pellets		
Additives	• Release agent		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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

### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

### Asia Pacific

Tel: +81 3 5521 8600

### Europe/Middle East/Africa

Tel: +41 22 717 51 11

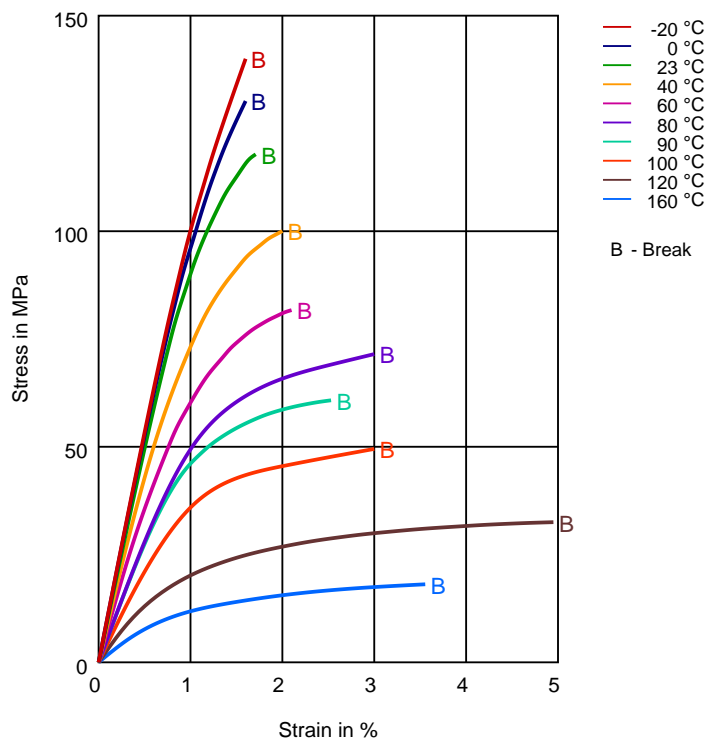


# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

Diagrams

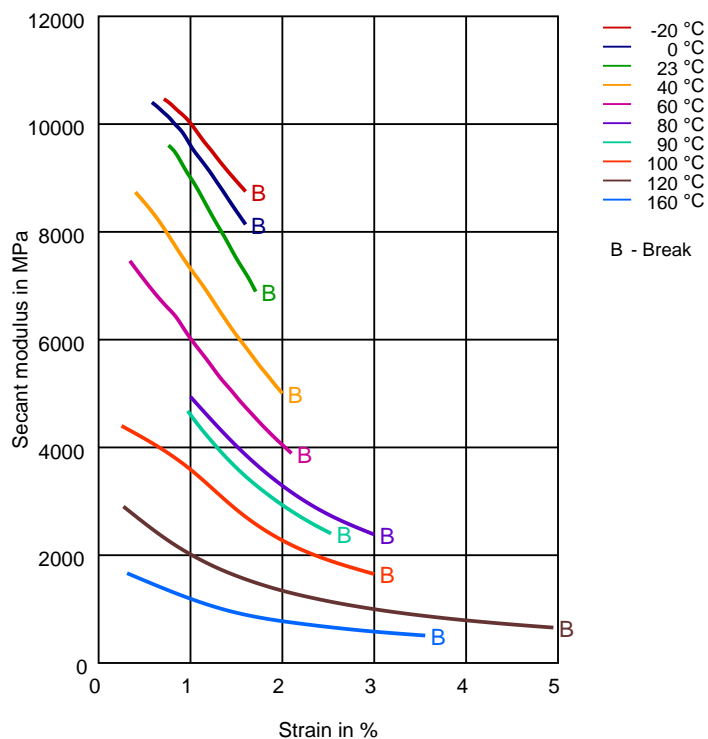
Stress-strain



# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

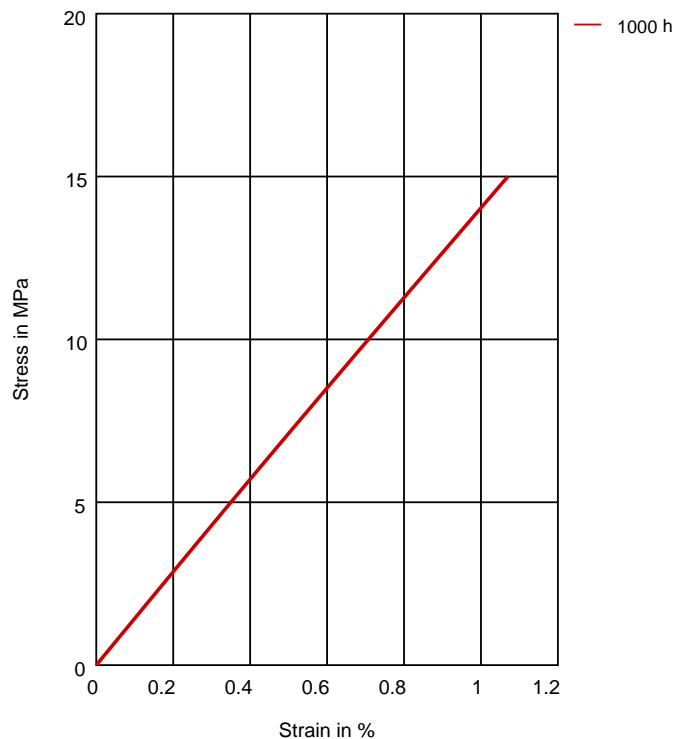
Secant modulus-strain



# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

Stress-strain (isochronous) 120°C



Revised: 2019-03-22

Page: 6 of 9

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

### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

### Asia Pacific

Tel: +81 3 5521 8600

### Europe/Middle East/Africa

Tel: +41 22 717 51 11

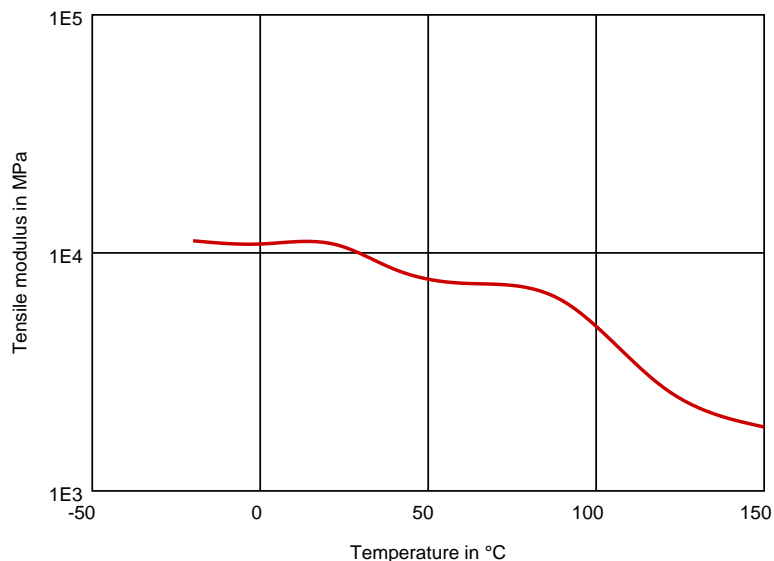
Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.



# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

Tensile modulus-temperature



Revised: 2019-03-22

Page: 7 of 9

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

### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

### Asia Pacific

Tel: +81 3 5521 8600

### Europe/Middle East/Africa

Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.



# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

### 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)

Revised: 2019-03-22

Page: 8 of 9

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

#### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

#### Asia Pacific

Tel: +81 3 5521 8600

#### Europe/Middle East/Africa

Tel: +41 22 717 51 11



Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.



# DuPont™ Crastin® LW9030FR NC010

## THERMOPLASTIC POLYESTER RESIN

- ✓ 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 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.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents. Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer representative and read Medical Caution H-50103-5.

DuPont™, the DuPont Oval Logo, and all products, unless otherwise noted, denoted with ™, ® or © are trademarks, service marks or registered trademarks of affiliates of DuPont de Nemours, Inc. © 2019 DuPont de Nemours, Inc. All rights reserved.

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

#### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

#### Asia Pacific

Tel: +81 3 5521 8600

#### Europe/Middle East/Africa

Tel: +41 22 717 51 11

