DuPont™ Crastin® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

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® LW9330 NC010 is a 30% glass fiber reinforced polybutylene terephthalate alloy for injection molding. It has improved surface aesthetics, excellent dimensional stability and low warpage characteristics.

General information	Value	Unit	Test Standard
Resin Identification	PBT+SAN-GF30	-	-
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	9800	MPa	ISO 527-1/-2
Stress at break	135	MPa	ISO 527-1/-2
Strain at break	2.3	%	ISO 527-1/-2
Flexural Modulus	8400	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
23°C	55	kJ/m²	
-40°C	50	kJ/m²	
Charpy notched impact strength			ISO 179/1eA
23°C	9	kJ/m²	
-30°C	9	kJ/m²	
-40°C	9	kJ/m²	
Izod notched impact strength			ISO 180/1A
23°C	7	kJ/m²	
-40°C	7	kJ/m²	
Izod impact strength			ISO 180/1U
23°C	45	kJ/m²	
-40°C	45	kJ/m²	
Thermal properties	**Value**	**Unit**	**Test Standard**
Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	185	°C	ISO 75-1/-2
Thermal conductivity of melt	0.28	W/(m K)	-
Spec. heat capacity of melt	1790	J/(kg K)	-
RTI, electrical, 0.8mm	130	°C	UL 746B
RTI, impact			UL 746B
0.8mm	125	°C	
1.5mm	125	°C	
3mm	130	°C	
RTI, strength, 0.8mm	130	°C	UL 746B
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

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® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

UL recognition	UL	-	-
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.8	mm	IEC 60695-11-10
Glow Wire Flammability Index			IEC 60695-2-1/2
0.75mm	700	°C	
1.5mm	700	°C	
3mm	775	°C	
Glow Wire Ignition Temperature			IEC 60695-2-1/3
0.75mm	725	°C	
1.5mm	725	°C	
3mm	800	°C	
Electrical properties	**Value**	**Unit**	**Test Standard**
Surface resistivity	>1E15	Ohm	IEC 60093
Comparative tracking index	550	-	IEC 60112
Other properties	**Value**	**Unit**	**Test Standard**
Humidity absorption, 2mm	0.25	%	Sim. to ISO 62
Water absorption, 2mm	1	%	Sim. to ISO 62
Density	1420	kg/m³	ISO 1183
Density of melt	1270	kg/m³	-
VDA Properties	**Value**	**Unit**	**Test Standard**
Burning rate, Thickness 1 mm	28	mm/min	ISO 3795 (FMVSS 302)

Characteristics			
Processing	• Injection Moulding		
Delivery form	• Pellets		
Additives	• Release agent		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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 = 260°C
Melt temperature range = 240-260°C
Mould temperature optimum = 100°C
Mould temperature range = 30-130°C

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

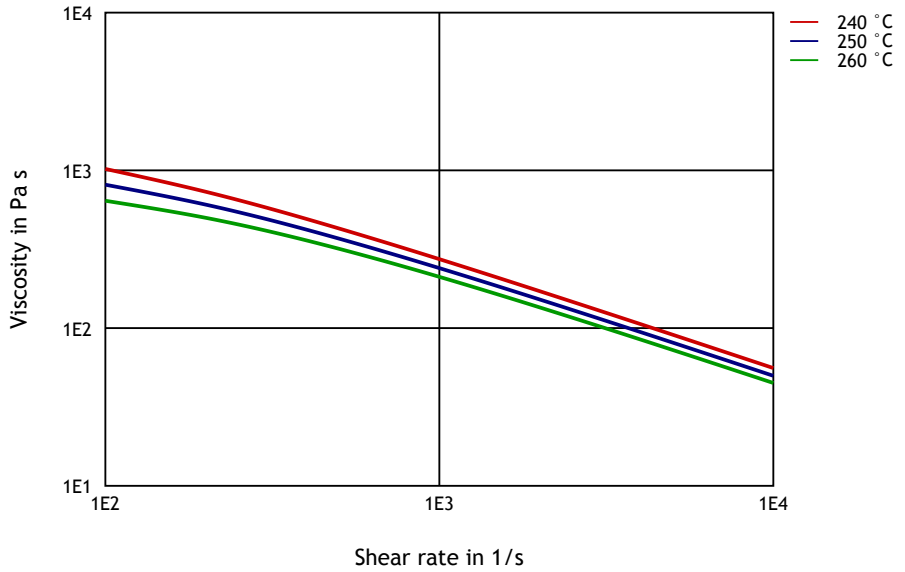
Europe/Middle East/Africa
Tel: +41 22 717 51 11

DuPont™ Crastin® LW9330 NC010

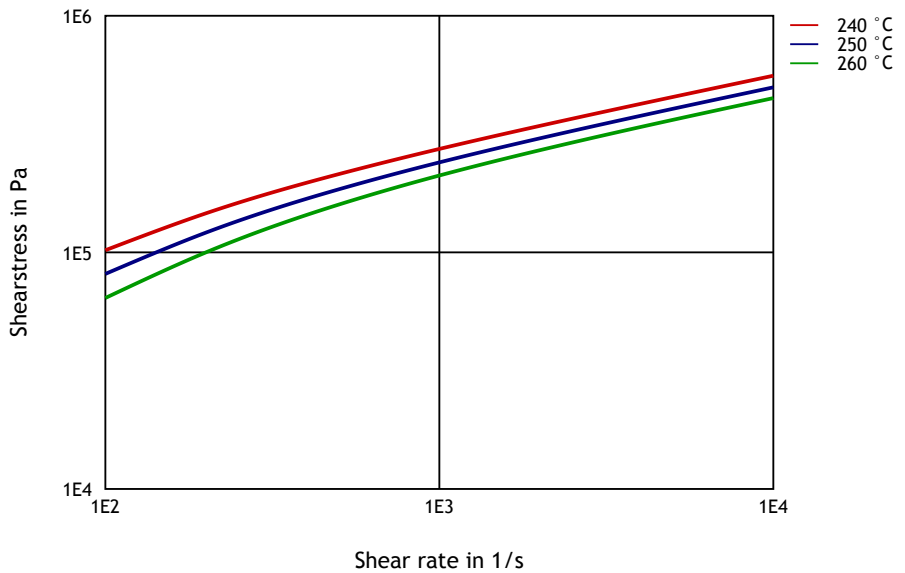
THERMOPLASTIC POLYESTER RESIN

Diagrams

Viscosity-shear rate



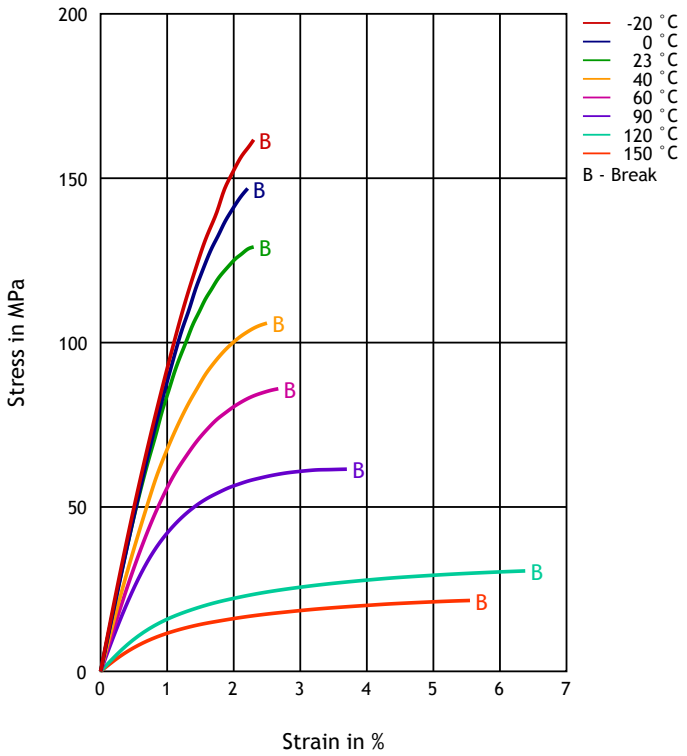
Shearstress-shear rate



DuPont™ Crastin® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

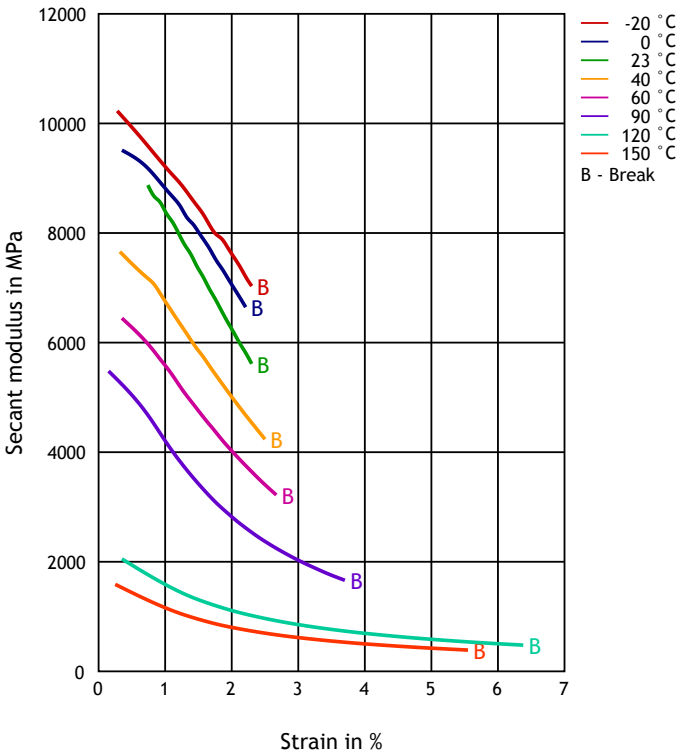
Stress-strain



DuPont™ Crastin® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

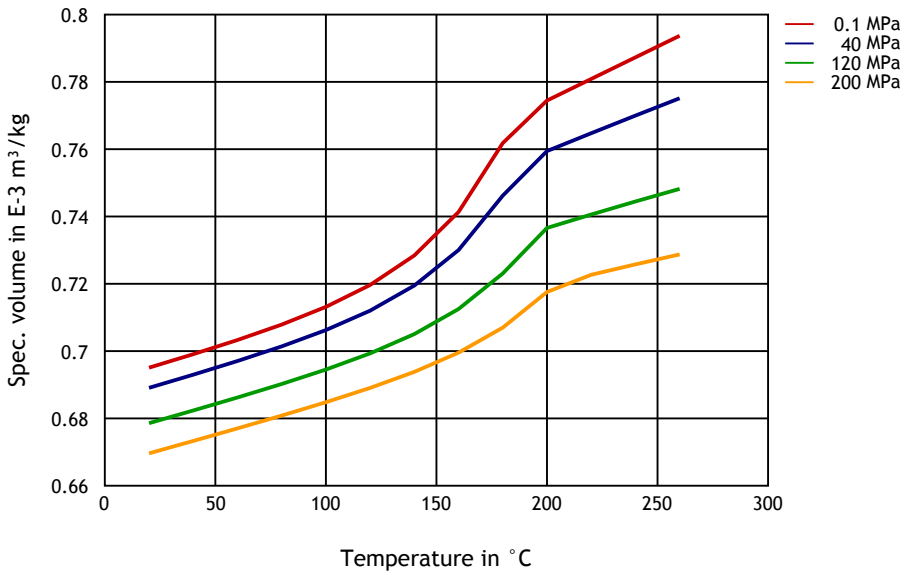
Secant modulus-strain



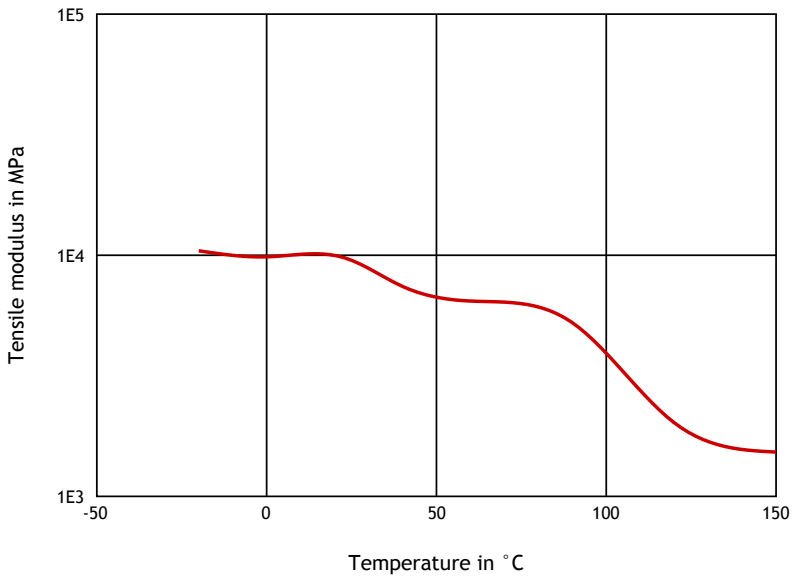
DuPont™ Crastin® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

Specific volume-temperature (pvT)



Tensile modulus-temperature



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

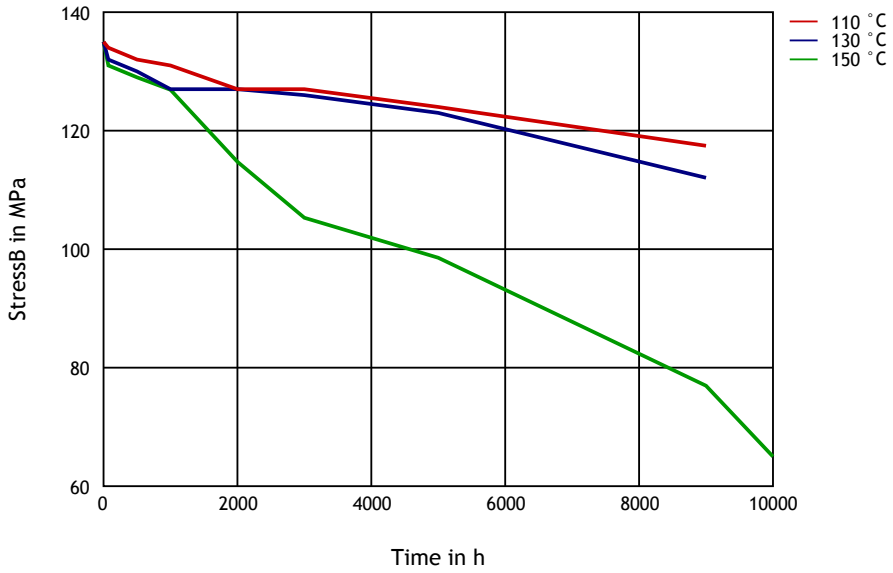
Asia Pacific
Tel: +81 3 5521 8600

Europe/Middle East/Africa
Tel: +41 22 717 51 11

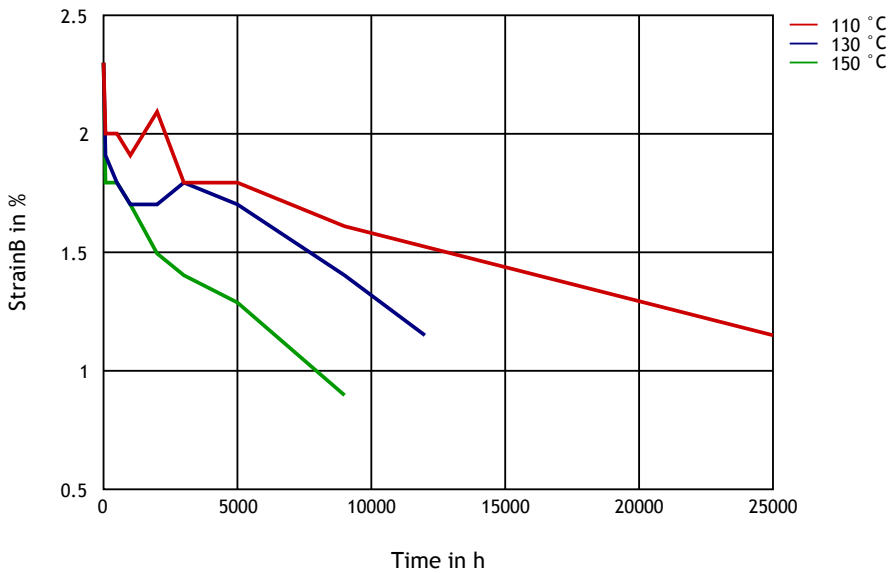
DuPont™ Crastin® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

LTHA-Stress at Break 4mm



LTHA-Strain at Break 4mm



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

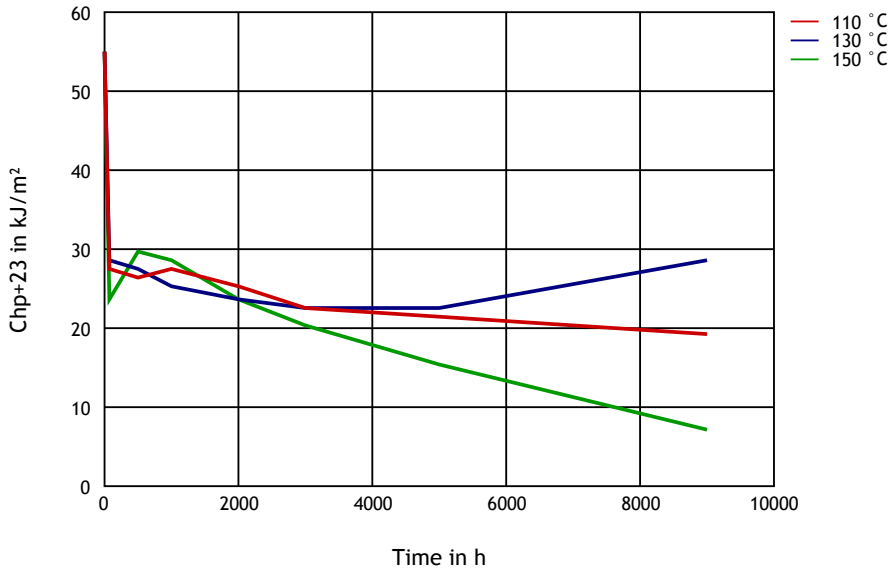
Asia Pacific
Tel: +81 3 5521 8600

Europe/Middle East/Africa
Tel: +41 22 717 51 11

DuPont™ Crastin® LW9330 NC010

THERMOPLASTIC POLYESTER RESIN

LTHA-Charpy Impact Strength (23°C) 4mm



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 (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)
✗	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).

DuPont™ Crastin® LW9330 NC010
THERMOPLASTIC POLYESTER RESIN

✗ 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.

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-50103-4.

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