

ISO 1183

## Crastin® LW9020SF BK580

### THERMOPLASTIC POLYESTER RESIN

Crastin® LW9020SF BK580 is a 20% glass fibre reinforced polybutylene terephthalate blend for

. It has improved surface aesthetics, excellent dimensional stability and low warpage characteristics.

			4.0
Prod	LICT	inform	nation

Resin Identification Part Marking Code	PBT+ASA-GF20 >PBT+ASA-GF20	<	ISO 1043 ISO 11469
Rheological properties			
Melt mass-flow rate Melt mass-flow rate, Temperature	250		ISO 1133
Melt mass-flow rate, Load Moulding shrinkage, parallel	0.3	kg %	ISO 294-4, 2577
Moulding shrinkage, parallel	0.8		ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus	7000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	-	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5		ISO 527-1/-2
Charpy impact strength, 23°C		kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C Poisson's ratio	0.35	kJ/m²	ISO 179/1eA
Thermal properties			
Melting temperature, 10°C/min	224	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	120	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	180	°C	ISO 75-1/-2
Temperature of deflection under load, 1.8 MPa, annealed	190	°C	ISO 75-1/-2
Thermal conductivity of melt	0.25	W/(m K)	ISO 22007-2
Specific heat capacity of melt	1850	J/(kg K)	ISO 22007-4
Flammability			
FMVSS Class	В		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)
Physical/Other properties			

Printed: 2024-09-04 Page: 1 of 9

1390 kg/m<sup>3</sup>

1210 kg/m<sup>3</sup>

Revised: 2024-07-16 Source: Celanese Materials Database

Density Density of melt



### THERMOPLASTIC POLYESTER RESIN

### Injection

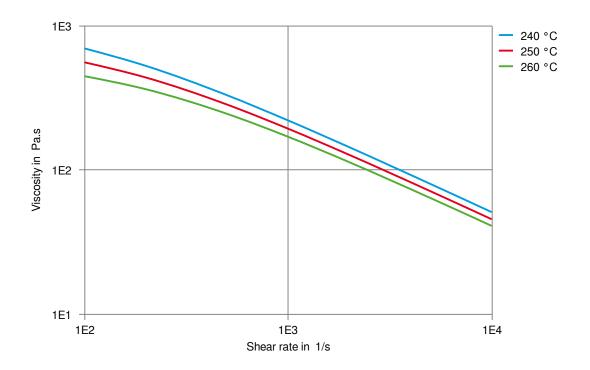
Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.04	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	80	°C
Min. mould temperature	30	°C
Max. mould temperature	130	°C
Hold pressure range	≥60	MPa
Hold pressure time	3	s/mm
Back pressure	As low as	MPa
	possible	
Ejection temperature	181	°C

Printed: 2024-09-04 Page: 2 of 9



## THERMOPLASTIC POLYESTER RESIN

Viscosity-shear rate

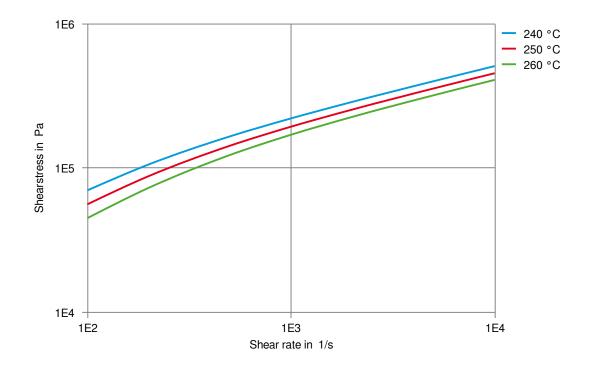


Printed: 2024-09-04 Page: 3 of 9



## THERMOPLASTIC POLYESTER RESIN

Shearstress-shear rate

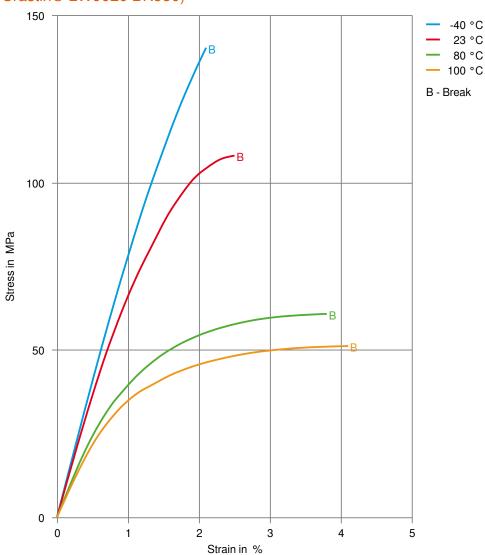


Printed: 2024-09-04 Page: 4 of 9



### THERMOPLASTIC POLYESTER RESIN

Stress-strain (measured on Crastin® LW9020 BK580)

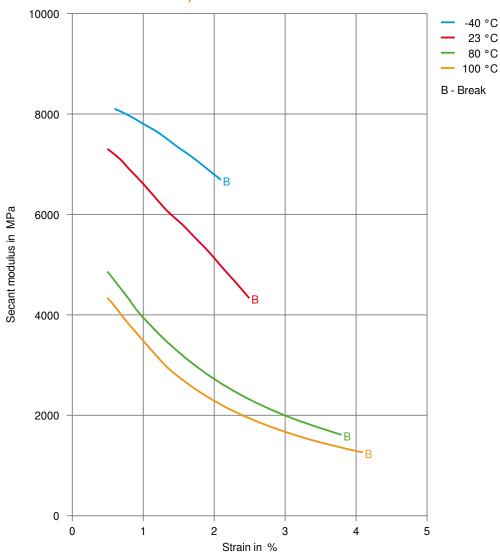


Printed: 2024-09-04 Page: 5 of 9



### THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain (measured on Crastin® LW9020 BK580)



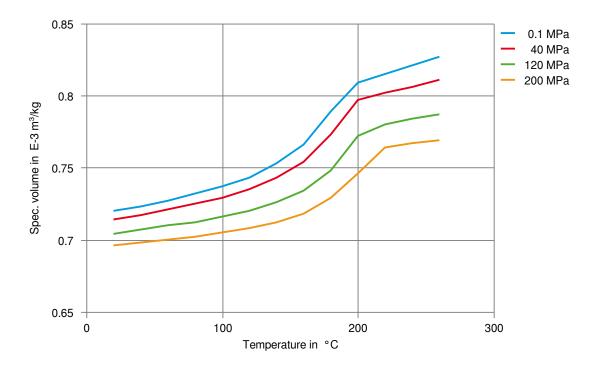
Printed: 2024-09-04 Page: 6 of 9

Revised: 2024-07-16 Source: Celanese Materials Database



### THERMOPLASTIC POLYESTER RESIN

Specific volume-temperature (pvT)



Printed: 2024-09-04 Page: 7 of 9

Revised: 2024-07-16 Source: Celanese Materials Database



### 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
- 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
- ✓ 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

Printed: 2024-09-04 Page: 8 of 9



#### THERMOPLASTIC POLYESTER RESIN

- ✓ 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).

Printed: 2024-09-04 Page: 9 of 9

Revised: 2024-07-16 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any e

© 2024 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC. KEPITAL is a registered trademark of Korea Engineering Plastics Company, Ltd.