



Crastin® LW9020FR BK851

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.

Crastin® LW9020FR BK851 is a 20% glass fiber reinforced, flame retardant polybutylene terephthalate blend for injection moulding. It has improved surface aesthetics, excellent dimensional stability and low warpage characteristics.

Product information

1 Toddet information			
Resin Identification	PBT+ASA-GF20FR(17)		ISO 1043
Part Marking Code	>PBT+ASA-GF20	OFR(17)<	ISO 11469
Rheological properties			
Melt mass-flow rate	16	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load		kg	
Moulding shrinkage, parallel	0.4 ^[DS]		ISO 294-4, 2577
Moulding shrinkage, normal	0.8 ^[DS]	%	ISO 294-4, 2577
[DS]: Derived from similar grade			
Typical mechanical properties			
Tensile modulus	7800	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min		MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min		%	ISO 527-1/-2
Flexural strength		MPa	ISO 178
Charpy impact strength, 23°C		kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C		kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C		kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C		kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C		kJ/m²	ISO 180/1A
Poisson's ratio	0.34		
[DS]: Derived from similar grade			
Thermal properties			
Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	120	_	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	170		ISO 75-1/-2
RTI, electrical, 0.75mm	140		UL 746B
RTI, electrical, 1.5mm	140		UL 746B
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ISO 3795 (FMVSS 302)

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RTI, electrical, 3.0mm	140 °C	UL 746B
RTI, impact, 0.75mm	115 °C	UL 746B
RTI, impact, 1.5mm	115 °C	UL 746B
RTI, impact, 3.0mm	120 °C	UL 746B
RTI, strength, 0.75mm	130 °C	UL 746B
RTI, strength, 1.5mm	130 °C	UL 746B
RTI, strength, 3.0mm	130 °C	UL 746B
Flammability		
Burning Behav. at 1.5mm nom. thickn.	V-0 class	IEC 60695-11-10

Burning Behav. at 1.5mm 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	3 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Oxygen index	27 %	ISO 4589-1/-2
Glow Wire Flammability Index, 3.0mm	960 °C	IEC 60695-2-12

DNI

Electrical properties

FMVSS Class

4.3		IEC 62631-2-1
4		IEC 62631-2-1
54	E-4	IEC 62631-2-1
196	E-4	IEC 62631-2-1
>1E13	Ohm.m	IEC 62631-3-1
1E14	Ohm	IEC 62631-3-2
31	kV/mm	IEC 60243-1
250		IEC 60112
	4 54 196 >1E13 1E14 31	4 54 E-4 196 E-4 >1E13 Ohm.m 1E14 Ohm 31 kV/mm

Physical/Other properties

Humidity absorption, 2mm	0.23 ^[DS] %	Sim. to ISO 62
Water absorption, 2mm	0.78 ^[DS] %	Sim. to ISO 62
Density	1500 kg/m³	ISO 1183
Density of melt	1360 kg/m ³	

[DS]: Derived from similar grade

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	<u>,</u>
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 MF	a

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Hold pressure time 3 s/mm
Back pressure As low as MPa
possible

Ejection temperature 170 °C

Characteristics

Processing Injection Moulding
Additives Flame retardant

Special characteristics Flame retardant, Low Warpage

Automotive

OEM STANDARD ADDITIONAL INFORMATION

Stellantis B62 0300 / 61/219E/217M/C4 01378_20_04239

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

- ✗ 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

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- X 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
- 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
- ✓ 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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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 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 equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users

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