



Crastin® S600F20 NC010

Celanese Corporation - THERMOPLASTIC POLYESTER RESIN

Thursday, December 21, 2023

General Information

Product Description

Unreinforced, Lubricated, Medium Viscosity Polybutylene Terephthalate

General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Mold Release		
RoHS Compliance	• Contact Manufacturer		
Automotive Specifications	• GM QK 006511		
Part Marking Code (ISO 11469)	• >PBT<		
Resin ID (ISO 1043)	• PBT		
ISO Designation	• ISO 7792-PBT,MG NR,11-030		

ASTM & ISO Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.31 g/cm ³	1.31 g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)	19 g/10 min	19 g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	14 cm ³ /10min	14 cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.6 %	1.6 %	
Across Flow : 176°F (80°C), 48 hr	0.50 %	0.50 %	
Flow	1.7 %	1.7 %	
Flow : 176°F (80°C), 48 hr	0.30 %	0.30 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C), 0.0787 in (2.00 mm)	0.40 %	0.40 %	
Equilibrium, 73°F (23°C), 0.0787 in (2.00 mm), 50% RH	0.20 %	0.20 %	
Viscosity Number (Reduced Viscosity)	130.0 ml/g	130.0 ml/g	ISO 1628
Viscosity Number	130 cm ³ /g	130 cm ³ /g	ISO 307
Intrinsic Viscosity	1.1	1.1	ISO 307, 1157, 1628
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus	363000 psi	2500 MPa	ISO 527-1
Tensile Stress (Yield)	7980 psi	55.0 MPa	ISO 527-2/50
Tensile Strain (Yield)	4.0 %	4.0 %	ISO 527-2/50
Nominal Tensile Strain at Break	40 %	40 %	ISO 527-2

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Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Creep Modulus			ISO 899-1
1 hr	377000 psi	2600 MPa	
1000 hr	261000 psi	1800 MPa	
Flexural Modulus	319000 psi	2200 MPa	ISO 178
Flexural Stress	12300 psi	85.0 MPa	ISO 178
Poisson's Ratio	0.38	0.38	
Coefficient of Friction			ISO 8295
vs. Itself - Static	0.40	0.40	
vs. Steel - Static	0.40	0.40	
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	1.9 ft-lb/in ²	4.0 kJ/m ²	
73°F (23°C)	2.4 ft-lb/in ²	5.0 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
Notched Izod Impact Strength (73°F (23°C))	2.1 ft-lb/in ²	4.5 kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength (73°F (23°C))	No Break	No Break	ISO 180/1U
Hardness	Typical Value (English)	Typical Value (SI)	Test Method
Ball Indentation Hardness			ISO 2039-1
H 358/30	20200 psi	139 MPa	
H 961/30	20200 psi	139 MPa	
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	248 °F	120 °C	ISO 75-2/B
66 psi (0.45 MPa), Annealed	356 °F	180 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	122 °F	50.0 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	140 °F	60.0 °C	ISO 75-2/A
Glass Transition Temperature ²	131 °F	55.0 °C	ISO 11357-3
Vicat Softening Temperature	356 °F	180 °C	ISO 306/B50
Melting Temperature ²	437 °F	225 °C	ISO 11357-3
Peak Crystallization Temperature ²	378 °F	192 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow	6.1E-5 in/in/°F	1.1E-4 cm/cm/°C	
Flow : -40 to 73°F (-40 to 23°C)	4.4E-5 in/in/°F	8.0E-5 cm/cm/°C	
Flow : 131 to 320°F (55 to 160°C)	1.1E-4 in/in/°F	1.9E-4 cm/cm/°C	
Transverse	6.7E-5 in/in/°F	1.2E-4 cm/cm/°C	
Transverse : -40 to 73°F (-40 to 23°C)	5.0E-5 in/in/°F	9.0E-5 cm/cm/°C	
Transverse : 131 to 320°F (55 to 160°C)	1.1E-4 in/in/°F	2.0E-4 cm/cm/°C	
Thermal Conductivity ³	2.0 Btu·in/hr/ft ² /°F	0.29 W/m/K	ISO 22007-2
TGA Curve	available	available	ISO 11359-2

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Electrical	Typical Value (English)	Typical Value (SI)	Test Method
Surface Resistivity	1.0E+12 ohms	1.0E+12 ohms	IEC 62631-3-2
Volume Resistivity	> 1.0E+13 ohms·m	> 1.0E+13 ohms·m	IEC 62631-3-1
Electric Strength	660 V/mil	26 kV/mm	IEC 60243-1
Relative Permittivity			IEC 62631-2-1
100 Hz	3.60	3.60	
1 MHz	3.20	3.20	
Dissipation Factor			IEC 62631-2-1
100 Hz	7.9E-4	7.9E-4	
1 MHz	0.020	0.020	
Comparative Tracking Index	575 V	575 V	IEC 60112
Flammability	Typical Value (English)	Typical Value (SI)	Test Method
Flame Rating			UL 94
0.030 in (0.75 mm)	HB	HB	IEC 60695-11-10, -20
0.06 in (1.5 mm)	HB	HB	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.030 in (0.75 mm)	1380 °F	750 °C	
0.04 in (1.0 mm)	1380 °F	750 °C	
0.06 in (1.5 mm)	1380 °F	750 °C	
0.08 in (2.0 mm)	1380 °F	750 °C	
0.12 in (3.0 mm)	1340 °F	725 °C	
Oxygen Index	22 %	22 %	ISO 4589-2
FMVSS Flammability	SE	SE	FMVSS 302
Fill Analysis	Typical Value (English)	Typical Value (SI)	Test Method
Melt Density	1.11 g/cm ³	1.11 g/cm ³	
Ejection Temperature	338 °F	170 °C	
Specific Heat Capacity of Melt	0.504 Btu/lb/°F	2110 J/kg/°C	ISO 22007-4
Thermal Conductivity of Melt	1.5 Btu·in/hr/ft ² /°F	0.21 W/m/K	ISO 22007-2
Additional Information	Typical Value (English)	Typical Value (SI)	Test Method
Fogging - G-value (condensate)	0.0 mg	0.0 mg	ISO 6452
Odor ⁴	3.00	3.00	VDA 270
Thermal Desorption Analysis of Organic Emissions ⁵	1.00 µg/g	1.00 µg/g	VDA 278

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	248 °F	120 °C
Drying Time - Desiccant Dryer	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	< 0.040 %	< 0.040 %
Processing (Melt) Temp	464 to 500 °F	240 to 260 °C
Melt Temperature, Optimum	482 °F	250 °C
Mold Temperature	86 to 266 °F	30 to 130 °C
Mold Temperature, Optimum	176 °F	80 °C
Holding Pressure	> 8700 psi	> 60.0 MPa
Back Pressure	As low as possible	As low as possible

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Injection	Typical Value (English)	Typical Value (SI)
Drying Recommended	yes	yes
Hold Pressure Time	4.00 s/mm	4.00 s/mm

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min

³ Flow

⁴ Derived from Similar Grade

⁵ Assessed (Max)

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