



Crastin® S600F20 NC010

DuPont Transportation & Industrial - THERMOPLASTIC POLYESTER RESIN

Tuesday, December 14, 2021

General Information

Product Description

Unreinforced 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
Tensile Strain (Yield)	4.0 %	4.0 %	ISO 527-2
Nominal Tensile Strain at Break	40 %	40 %	ISO 527-2
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	

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Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Coefficient of Friction			ASTM D1894
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	239 °F	115 °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 11357-2
Vicat Softening Temperature	347 °F	175 °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	2.0 Btu·in/hr/ft ² /°F	0.29 W/m/K	
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
1 MHz	3.20	3.20	
100 Hz	3.60	3.60	
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

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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,
0.06 in (1.5 mm)	HB	HB	-20
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)	
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	
Thermal Conductivity of Melt	1.5 Btu·in/hr/ft ² /°F	0.21 W/m/K	
Additional Information	Typical Value (English)	Typical Value (SI)	Test Method
Fogging - G-value (condensate)	0.0 mg	0.0 mg	ISO 6452
Odor ³	3.00	3.00	VDA 270
Thermal Desorption Analysis of Organic Emissions ⁴	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
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 Derived from Similar Grade

⁴ Assessed (Max)

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