Tepla® T7020GF

Material Description:

Tepla® T7020GF is a high flow, 20% glass-fiber reinforced, polyetheretherketone (PEEK).The glass fiber content is optimized to provide a balance of strength and stiffness with toughness-related properties, such as impact resistance and elongation at break. This level of reinforcement also affords greater mechanical robustness in structural applications, particularly those with service temperatures approaching 240 ℃ (464 ° F).It has excellent wear resistance, fatigue resistance, purity and chemical resistance to organics, acids and bases. These properties make it well-suited for applications in healthcare, transportation, electronics, chemical processing and other industrial uses.

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific	• North America
	• Europe	• Latin America
	• Middle East	• Africa
Filler/Reinforcement	• Glass Fiber, 20% Filler by Weight	
Features	• Autoclave Sterilizable	• Good Sterilizability
	• Chemical Resistant	• Flame Retardant
	• Heat Sterilizable	• High Stiffness
	• High Heat Resistance	• E-beam Sterilizable
	• Radiation (Gamma) Resistant	• Ethylene Oxide Sterilizable
	• Radiation Sterilizable	• Fatigue Resistant
	• High Flow	• Good Dimensional Stability
	• Steam Resistant	• Steam Sterilizable
	• Radiotranslucent	• Biocompatible
	• High Strength	
Uses	• Surgical Instruments	• Aircraft Applications
	• Industrial Applications	• Medical Devices
	• Connectors	• Dental Applications
	• Oil/Gas Applications	• Pump Parts
	• Film	• Seals
	• Medical/Healthcare Applications	• Hospital Goods
	• Automotive Applications	• Electrical/Electronic Applications
Appearance	• Tan	
Forms	• Pellets	
RoHS Compliance	• Contact Manufacturer	
Processing Method	• Injection Molding	

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.46	g/cm^3	ISO 1183
Water Absorption (24 hr)	0.022	%	ISO 15512
Melt Mass-Flow Rate 400℃/2.16 kg	18	g/10min	ASTM D1238
Ash Content	20	%	ISO 3451-1

Hardness	Typical Value	Unit	Test Method
Rockwell Hardness (M-Scale)	103		ASTM D785

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	8550	MPa	ISO 527-2
Tensile Modulus	8400	MPa	ASTM D638
Tensile Stress (Break)	155	MPa	ASTM D638
Tensile Stress (Break)	164	MPa	ISO 527-2
Tensile Elongation (Break)	3.6	%	ASTM D638

Tensile Elongation (Break)	3.4	%	ISO 527-2/1A/5
Flexural Modulus			
	7650	MPa	ASTM D790
	7500	MPa	ISO 178
Flexure Strength			
	252	MPa	ASTM D790
	237	MPa	ISO 178
Modulus of Elasticity			
	8.34	GPa	ASTM D638
	8.24	GPa	ISO 527

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact			
	100	J/m	ASTM D256
	5.9	kJ/m^2	ISO 180
Unnotched Izod Impact	940	J/m	ASTM D256
Charpy Unnotched Impact Strength	59.8	kJ/m^2	ISO 179

Electrical Properties	Typical Value	Unit	Test Method
Dielectric Constant			ASTM D150
60 Hz	3.34		
1 KHz	3.35		
1 MHz	3.35		
Volume Resisitivity	7.00E+15	Ohms·cm	ASTM D257
Surface Resistivity	5.00E+15	Ohms	ASTM D257
Dielectric Strength (3.0mm)	310	KV/mm	ASTM D149
Dissipation Factor			ASTM D150
60 Hz	2.00E-03		
1 KHz	1.00E-03		
1 MHz	4.00E-03		

Thermal Properties	Typical Value	Unit	Test Method
Melting Temperature [1]	345		ISO 11357

Processing Information	Typical Value	Unit
Injection Rate	Fast	
Screw Compresion Ratio	2.5:1.0 to 3.5:1.0	
Mold Temperature	175 to 205	℃
Drying Temperature	150	℃
Drying Time	4	hr
Front Temperature	377	℃
Middle Temperature	371	℃
Rear Temperature	365	℃
Nozzle Temperature	382	℃

Fill Analysis	Typical Value	Unit	Test Method
Melt Viscosity (400℃, 1000 sec^-1)	280	Pa·s	ASTM D3835

Notes:

[1] DSC First heat

CAUTION/警告!

Before using, read the Molding Guide, Material Safety Data Sheets, and Bulletins available from NFD Advanced Composites Sales offices and Distributors supplied to your company. Caution! During drying, purging and molding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat. Use adequate local exhaust ventilation during thermal processing. To prevent resin decomposition, do not contaminate the resin or exceed the recommended melt temperature or hold-up time. Avoid inhalation or skin and eyes contact. Sweep up and dispose of spilled resin to eliminate slipping hazard.
在使用之前，请阅读NFD公司销售办事处和经销商提供给贵公司的材料成型指南 、材料安全数据表和公告。警告！在干燥、吹扫和成型过程中，少量有害气体或颗粒物质可能会在被释放，这些可能会刺激眼睛，鼻子和喉咙。热处理过程中请注意做好排气通风工作 。为防止树脂分解，请勿污染树脂或超过我们为您推荐的熔融温度或时间。请避免吸入或与皮肤、眼睛等接触。清扫和处理溢出的树脂，以消除滑到的危险。

LEGAL NOTICES/法律声明

The figures indicated here are approximate values. They may be affected by different factors, and the user is not released therefore from the obligation of performing checks and trials of his own. The values indicated here have been compiled on the basis of current tests and findings. Any legally binding guarantee of certain properties, or any suitability for a specific application can not be inferred from the present data. For detailed production regulatory information, contact customer service.
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