

## Tepla® T7030CF

### Material Description:

Tepla® T7030CF is the low-flow, 30% carbon-fiber reinforced grade of polyetheretherketone (PEEK). Tepla® T7030CF is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent wear resistance, best-in-class fatigue resistance, ease of melt processing, high purity, and excellent 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 • Europe • Middle East • North America • Latin America • Africa
Filler/Reinforcement	• Carbon Fiber, 30% Filler by Weight
Features	• Autoclave Sterilizable • Chemical Resistant • Heat Sterilizable • High Heat Resistance • Radiation (Gamma) Resistant • Radiation Sterilizable • Radiotranslucent • Steam Resistant • High Stiffness • Good Sterilizability • Flame Retardant • High Strength • E-beam Sterilizable • Ethylene Oxide Sterilizable • Fatigue Resistant • Good Dimensional Stability • Steam Sterilizable
Uses	• Automotive Applications • Industrial Applications • Connectors • Medical/Healthcare Applications • Pump Parts • Hospital Goods • Electrical/Electronic Applications • Thrust Washer • Medical Devices • Dental Applications • Oil/Gas Applications • Gears • Surgical Instruments
Appearance	• Black
Forms	• Pellets
RoHS Compliance	• RoHS Compliant
Processing Method	• Injection Molding • Profile Extrusion • Machining
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1)

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.41	g/cm <sup>3</sup>	ASTM D792
Water Absorption (24 hr)	0.1	%	ASTM D570
Melt Mass-Flow Rate (MFR) 400°C/2.16 kg	1.1	g/10min	ASTM D1238
Molding Shrinkage <sup>1</sup>			ASTM D955
Flow (3.18mm)	0.02 to 0.20	%	
Across Flow (3.18mm)	1.5 to 1.7	%	

Hardness	Typical Value	Unit	Test Method
Rockwell Hardness (M-Scale)	105		ASTM D785
Durometer Hardness (Shore D,1 sec)	92		ASTM D2240

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	23000	MPa	ISO 527-2/1A/1
Tensile Modulus <sup>2</sup>	20100	MPa	ASTM D638

Tensile Stress	204	MPa	ASTM D638
Tensile Stress (Yield)	228	MPa	ISO 527-2/1A/1
Tensile Elongation (Break)	1.7	%	ISO 527-2/1A/1
Tensile Elongation <sup>2</sup> (Break)	1.7	%	ASTM D638
Flexural Modulus	17200	MPa	ASTM D790
	20250	MPa	ISO 178
Flexural Strength	330	MPa	ASTM D790
	316	MPa	ISO 178
Compressive Strength	174	MPa	ASTM D695
Shear Strength	95	MPa	ASTM D732
Poisson's Ratio	0.42		ASTM E132

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact (23°C)	103	J/m	ASTM D256
	10.5	kJ/m <sup>2</sup>	ISO 180
Unnotched Izod Impact (23°C)	840	J/m	ASTM D4812
	43.5	kJ/m <sup>2</sup>	ISO 180

Flammability	Typical Value	Unit	Test Method
Flame Rating			UL 94
0.8 mm	V-0		
1.6 mm	V-0		

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed, 3.2mm	315	°C	ASTM D648
CLTE - Flow (-50 to 50°C)	5.20E-06	cm/cm/°C	ASTM E831
Glass Transition Temperature	150	°C	ASTM D3418
Specific Heat			DSC
50°C	1130	J/kg/°C	
200°C	1620	J/kg/°C	
Peak Melting Temperature	340	°C	ASTM D3418
Thermal Conductivity	0.37	W/m/K	ASTM E1530

Processing Information	Typical Value	Unit
Injection Rate	Fast	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	
Mold Temperature	176 to 205	°C
Drying Temperature	150	°C
Drying Time	4	hr
Front Temperature	375	°C
Middle Temperature	370	°C
Rear Temperature	365	°C
Nozzle Temperature	380	°C

Fill Analysis	Typical Value	Unit	Test Method
Melt Viscosity (400°C, 1000 sec <sup>-1</sup> )	920	Pa·s	ASTM D3835

Notes:

<sup>1</sup> 5" x 0.5" x 0.125" bars

<sup>2</sup> 50 mm/min

#### 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.

上列数据仅作参考用途，它们可能会受不同因素的影响，使用者有责任通过实验自行确定材料特性。上述资料根据现有测试得出，对物料特性是否适合某特殊用途及特性不能给予保证，数据也没有任何法律约束力。更多有关详细的产品监管信息，请联系客户服务。

#### COMPANY/公司：

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