Tepla® T7000 CF TF

Material Description:

Tepla® T7000 CF TF is a polyetheretherketone (PEEK) product filled with carbon fiber and PTFE.Characteristics include:Self-Lubricating,Wear Resistance.Tepla® T7000 CF TF is a PEEK based compound to provide low wear rates and good mechanical properties in applications where an external lubricant is provided.

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific	• North America
	• Europe	• Latin America
	• Middle East	• Africa
Filler/Reinforcement	• Carbon Fiber	
Additive	• PTFE Lubricant	
Features	• Good Dimensional Stability	• Wear Resistance
	• Chemical Resistant	• Flame Retardant
	• High Heat Resistance	• Fatigue Resistant
	• Hydrolysis Resistant	• Electrical Insulation
	• Self-Lubricating	
Uses	• Thrust Washer	• Automotive Applications
	• Oil/Gas Applications	• Bushings
	• Gears	
Appearance	• Black	
Forms	• Pellets	
RoHS Compliance	• RoHS Compliant	
Processing Method	• Injection Molding	• Machining
	• Profile Extrusion	

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.5	g/cm^3	ASTM D792
Water Absorption (24 hr)	0.03	%	ASTM D570
Melt Mass-Flow Rate (MFR) 400℃/2.16 kg	2	g/10min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow (3.18mm)	0.00 to 0.20	%	
Across Flow (3.18mm)	1.3 to 1.5	%	

Hardness	Typical Value	Unit	Test Method
Rockwell Hardness (M-Scale)	90		ASTM D785

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	26000	MPa	ISO 527-2/1A/1
Tensile Modulus	24600	MPa	ASTM D638
Tensile Stress	194	MPa	ASTM D638
Tensile Stress (Yield)	200	MPa	ISO 527-2/1A/5
Tensile Elongation (Break)	1.4	%	ISO 527-2/1A/5
Tensile Elongation [2] (Break)	1.4	%	ASTM D638
Flexural Modulus			
	21000	MPa	ASTM D790
	23000	MPa	ISO 178
Flexural Strength			
	262	MPa	ASTM D790
	271	MPa	ISO 178
Compressive Strength	128	MPa	ASTM D695

Shear Strength	84	MPa	ASTM D732
Coefficient of Friction [3]	0.34		ASTM D1894
Coefficient of Friction [4]	0.45		ASTM D3702
Coefficient of Friction [5]	0.12		ASTM D1894
Coefficient of Friction [6]	0.07		ASTM D3702

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact (23℃)			
	74	J/m	ASTM D256
	9	kJ/m^2	ISO 180
Unnotched Izod Impact (23℃)			
	550	J/m	ASTM D4812
	44	kJ/m^2	ISO 180

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Annealed	300	℃	ASTM D648
CLTE - Flow (-50 to 50℃)	1.70E-05	cm/cm/℃	ASTM E831
Glass Transition Temperature	152	℃	ASTM D3418
Specific Heat			DSC
50℃	1250	J/kg/℃	
200℃	1670	J/kg/℃	
Peak Melting Temperature	342	℃	ASTM D3418
Thermal Conductivity	0.36	W/m/K	ASTM E1530

Processing Information	Typical Value	Unit
Injection Rate	Fast	
Screw Compresion Ratio	2.5:1.0 to 3.5:1.0	
Mold Temperature	176 to 205	℃
Drying Temperature	149	℃
Drying Time	4	hr
Front Temperature	377	℃
Middle Temperature	371	℃
Rear Temperature	366	℃
Nozzle Temperature	382	℃
Back Pressure	minimum	

Fill Analysis	Typical Value	Unit	Test Method
Melt Viscosity (400℃, 1000 sec^-1)	380	Pa·s	ASTM D3835

Notes:

[1] 5" x 0.5" x 0.125" bars
[2] 5.0 mm/min
[3] Dry conditions: 800 fpm and 31.25 psi (4.06 m/s and 215 kPa)
[4] Dry conditions: 200 fpm and 125 psi (1.02 m/s and 862 kPa)
Not recommended at 50 fpm and 500 psi (0.25 m/s and 3447 kPa)
[5] Lubricated conditions: 75 fpm and 1000 psi (0.38 m/s and 6895 kPa)
[6] Lubricated conditions: 800 fpm and 750 psi (4.06 m/s and 5171 kPa)

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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