

Tepla® T7020CF

Material Description:

Tepla® T7020CF is high performance thermoplastic material, 20% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour black. Applications for higher strength and stiffness in a static or dynamic system. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• North America	
	• Europe	• Latin America	
	• Middle East	• Africa	
Filler/Reinforcement	• Carbon Fiber, 20% Filler by Weight		
Features	• Chemical Resistant	• High Strength	
	• Food Contact Acceptable	• Low CLTE	
	• High Stiffness	• Low Friction	
	• Semi Crystalline	• Wear Resistant	
Agency Ratings	• FDA Food Contact, Unspecified Rating		
Appearance	• Black		
Forms	• Granules		
Processing Method	• Extrusion	• Injection Molding	

Physical Properties	Typical Value	Unit	Test Method
Density ¹	1.37	g/10 min	ISO 1183
Spiral Flow ^{2,3}	10	cm	Internal Method
Molding Shrinkage ⁴			ISO 294-4
Across Flow	0.7	%	
Flow	0.2	%	
Water Absorption Saturation, 23°C	0.35	%	ISO 62
Water Absorption Saturation, 100°C	0.5	%	ISO 62

Hardness	Typical Value	Unit	Test Method
Shore Hardness (Shore D, 23°C)	86		ISO 868

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus (23°C)	19300	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	210	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	2	%	ISO 527-2
Flexural Modulus (23°C)	16800	MPa	ISO 178
Flexural Stress (23°C)	295	MPa	ISO 178

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact Strength 23°C	9.7	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength 23°C	40.4	kJ/m ²	ISO 180

Flammability	Typical Value	Unit	Test Method
Glow Wire Flammability Index 2.0 mm	960	°C	IEC 60695-2-12
Toxicity			NES 713

CO content	0.05
CO ₂ content	0.12
Total gases	0.17

Electrical Properties	Typical Value	Unit	Test Method
Volume Resistivity ⁵ (23°C)	1.00E+07	ohms-cm	IEC 60093

Thermal Properties	Typical Value	Unit	Test Method
Heat Deflection Temperature 1.8 MPa, Unannealed	325	°C	ISO 75-2/Af
Glass Transition Temperature			ISO 11357-2
-- ⁶	143	°C	
-- ⁷	150	°C	
Melting Temperature	343	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow : < 143°C	8.00E-06	cm/cm/°C	
Flow : > 143°C	8.00E-06	cm/cm/°C	
Transverse : < 143°C	4.50E-05	cm/cm/°C	
Transverse : > 143°C	1.10E-04	cm/cm/°C	

Fill Analysis	Typical Value	Unit	Test Method
Melt Viscosity (400°C)	525	Pa·s	ISO 11443

Injection	Typical Value	Unit
Drying Temperature	120 to 150	°C
Drying Time	3.0 to 5.0	hr
Hopper Temperature	< 100	°C
Rear Temperature	375	°C
Middle Temperature	380 to 385	°C
Front Temperature	390	°C
Nozzle Temperature	395	°C
Mold Temperature	180 to 210	°C

Injection Notes

Runner: Die / nozzle >3mm, manifold >3.5mm

Gate: >2mm or 0.5 x part thickness

Notes

¹ Crystalline

² Mold Temperature: 200°C, Melt Temperature: 395°C

³ 1 mm

⁴ 395°C nozzle, 200°C tool

⁵ 1V

⁶ Onset

⁷ Midpoint

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的热熔温度或时间。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。

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感谢您访问新孚达 (NFD)! 我们秉承 "New Formula Designer" 的发展理念, 将科研创新与生产应用紧密相连, 无论您是设计师、工程师或者是采购专家, 我们都可以帮助您拓展业务并获得新的灵感。我们坚持诚信、合作、效率、创新的核心价值观, 始终把客户放在第一位。相比于我们的竞争对手, 我们专注于为您提供更先进的技术配方、更优质的产品, 更好的解决方案及更周到的售后服务, 我们懂市场、我们懂产品、我们更懂你们。

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