

Tepla® T8130CF

Material Description:

Tepla® T8130CF is an 30% carbon-fiber reinforced grade of polyamide-imide (PAI) resin. It offers high strength and modulus, exceptional creep resistance, and good fatigue resistance. It has thermal expansion characteristics similar to steel, and therefore excellent dimensional stability.

Tepla® PAI has the highest strength and stiffness of any thermoplastic up to 275°C (525°F). It has outstanding resistance to wear, creep, and chemicals. The potential applications for this resin include metal replacement, sliding vanes, aerospace parts, impellers, shrouds, pistons, and housings. It is available in injection molding and extrusion (E) grades.

General	
Material Status	• Commercial: Active
Availability	• Asia Pacific
	• Europe
	• Middle East
Filler/Reinforcement	• Carbon Fiber, 30% Filler by Weight
	• Chemical Resistant
	• Fatigue Resistant
Features	• Good Compressive Strength
	• High Heat Resistance
	• High Temperature Strength
	• Creep Resistant
	• Flame Retardant
	• Good Dimensional Stability
Uses	• Aerospace Applications
	• Film
	• Connectors
	• Housings
	• Industrial Parts
	• Metal Replacement
	• Semiconductor Molding Compounds
	• Aircraft Applications
	• Business Equipment
• Gears	
Forms	• Pellets
	• Profile Extrusion
RoHS Compliance	• RoHS Compliant
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1)
Processing Method	• Machining
	• Injection Molding

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.48	g/cm ³	ASTM D792
Molding Shrinkage-Flow	0 to 0.15	%	ASTM D955
Water Absorption (24 hr)	0.26	%	ASTM D570

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	17500	MPa	ASTM D638
	22500	MPa	ASTM D1708
Tensile Strength	225	MPa	ASTM D638
Tensile Stress	207	MPa	ASTM D1708
Tensile Elongation	1.5	%	ASTM D638
	6	%	ASTM D1708
Flexural Modulus	20700	MPa	ASTM D790
	16000	MPa	ASTM D790
Flexural Strength	357	MPa	ASTM D790
23°C			

232°C	178	MPa	
Compressive Modulus	10000	MPa	ASTM D695
Compressive Strength	254	MPa	ASTM D695

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact	50	J/m	ASTM D256
Unnotched Izod Impact	320	J/m	ASTM D4812

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.8MPa, Unannealed	282	°C	ASTM D648
Coefficient of Linear Thermal Expansion	9.00E-06	cm/cm/°C	ASTM D696
Thermal Conductivity	0.52	W/m/K	ASTM C177

Processing Information	Typical Value	Unit
Mold Temperature	199 to 216	°C
Drying Temperature	177	°C
Drying Time	3	hr
Nozzle Temperature	371	°C
Suggested Max Moisture	0.05	%
Rear Temperature	304	°C
Screw Speed	50 to 100	rpm
Back Pressure	6.89	MPa
Screw L/D Ratio	18.0:1.0 to 24.0:1.0	

Injection Notes

Minimum drying conditions: 3 hours at 350°F (177°C), 4 hours at 300°F (149°C), or 16 hours at 250°F (121°C).

Compression Ratio: 1:1 to 1.5:1

Begin hold pressure at a high setting 6,000-8,000 psi (41.37-55.16 MPa), for several seconds, of the hold pressure sequence. then drop off to 3,000-5,000 psi (20.69-34.48 MPa), for the duration

Molded parts must be post cured.

NOTES:

¹ ASTM Test Method D1708 has been used to measure the tensile properties of PAI and similar materials because the small test specimen conserved material. Today the most widely used specimen is the Type1 bar of ASTM D638. These D1708 values are included for historical purposes and they should not be compared to the D638 values.

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。

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