

Tepla® T5000 HF

Material Description:

Tepla® T5000 HF is a high melt flow grade polyphenylsulfone (PPSU). It is especially well-suited for parts requiring long flow length with thin walls. Tepla® T5000 HF resins offer exceptional hydrolytic stability and toughness superior to other commercially-available, high-temperature engineering resins. They also offer high deflection temperatures and outstanding resistance to environmental stress cracking. Tepla® T5000 HF polymers are inherently flame retardant, provide excellent thermal stability and possess good electrical properties.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific
	• Europe
	• Middle East
Features	• Acid Resistant
	• Base Resistant
	• Chemical Resistant
	• E-beam Sterilizable
	• Ethylene Oxide Sterilizable
	• Good Sterilizability
	• Heat Sterilizable
	• High ESCR (Stress Crack Resist.)
	• Radiation (Gamma) Resistant
	• Radiotranslucent
	• Aerospace Applications
	• Automotive Applications
Uses	• Food Service Applications
	• Medical Devices
	• Medical/Healthcare Applications
Appearance	• Clear Amber
Forms	• Pellets
RoHS Compliance	• RoHS Compliant
Processing Method	• Injection Molding
	• Sheet Extrusion
Multi-Point Data	• Viscosity vs. Shear Rate (ISO 11403-2)

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.29	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (365°C/5.0 kg)	20 to 28	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.18 mm)	0.7	%	ASTM D955
Water Absorption			ASTM D570
24 hr	0.37	%	
Equilibrium	1.1	%	

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus (3.18 mm)	2500	MPa	ASTM D638
Tensile Strength (3.18 mm)	72	MPa	ASTM D638
Tensile Elongation			ASTM D638
Yield, 3.18 mm	7	%	
Break, 3.18 mm	60 to 118	%	
Flexural Modulus (3.18 mm)	2550	MPa	ASTM D790
Flexural Strength			ASTM D790
5.0% Strain, 3.18 mm	95	MPa	

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact (3.18 mm)	710	J/m	ASTM D256
Tensile Impact Strength (3.18 mm)	400	KJ/m ²	ASTM D1822

Flammability	Typical Value	Unit	Test Method
Flame Rating ¹ (0.76mm)	V-0		UL 94

Electrical Properties	Typical Value	Unit	Test Method
Volume Resistivity	9.00E+15	Ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
0.0254 mm	> 200	kV/mm	
3.18 mm	15	kV/mm	
Dielectric Constant(3.18 mm, 60 Hz)	3.44		ASTM D150

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed, 3.18mm	209	°C	ASTM D648
Glass Transition Temperature ²	220	°C	DSC
CLTE - Flow (3.18 mm)	5.60E-05	cm/cm/°C	ASTM D696

Optical	Typical Value	Unit	Test Method
Refractive Index	1.672		ASTM D542

Additional Information	Typical Value	Unit	
Steam Sterilization - w/ Morpholine ³	> 1000	Cycles	

Injection	Typical Value	Unit	
Drying Temperature	149	°C	
Drying Time	6	hr	
Processing (Melt) Temp	343 to 390	°C	
Mold Temperature	138 to 163	°C	
Screw Compression Ratio	2.2 : 1.0		

Extrusion	Typical Value	Unit	
Drying Temperature	171	°C	
Drying Time	4	hr	

NOTES:

¹ These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

² Heating rate of 36°F (20°C) per minute.

³ Cycles passed without cracking, crazing, or rupture.

Steam Autoclave Conditions:

- Temperature: 270°F (132°C)
- Time: 30 minutes/cycle
- Steam Pressure: 27 psig (0.19 MPa)
- Stress Level: 1000 psi (7.0 MPa) in flexure
- Additive: Morpholine at 50 ppm

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

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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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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