

Tepla® T7100

Material Description:

Tepla® T7100 is an unreinforced polyaryletherketone (PAEK) that offers improved ductility and impact strength relative to PEEK while retaining most of the key performance attributes of PEEK. Tepla® T7100 resin is suited for a variety of processing methods including compression molding, stock shape extrusion, as well as injection molding.

Tepla® T7100 has been formulated for applications requiring a balance of chemical resistance and mechanical strength along with good part aesthetics, thereby bridging the performance gaps within the ultra polymers space. These and other properties make this resin well-suited for applications in healthcare, transportation, semiconductor, electronics, chemical processing, and other industries.

General	
Material Status	• Commercial: Active
Availability	• Asia Pacific
	• Europe
	• Middle East
Features	• Chemical Resistant
	• Fatigue Resistant
	• Good Dimensional Stability
	• High Heat Resistance
Uses	• Bearings
	• Connectors
	• Semiconductor Molding Compounds
Appearance	• Beige
Forms	• Pellets
RoHS Compliance	• RoHS Compliant
Processing Method	• Extrusion Blow Molding
	• Film Extrusion
	• Injection Molding
	• Profile Extrusion
	• Wire & Cable Extrusion
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1)
	• Viscosity vs. Shear Rate (ISO 11403-2)

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.29	g/cm ³	ASTM D792
Water Absorption (24 hr)	0.2	%	ASTM D570
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	5	g/10min	ASTM D1238
Molding Shrinkage ¹			ASTM D955
Flow (3.18mm)	0.7 to 0.9	%	
Across Flow (3.18mm)	1.1 to 1.3	%	

Hardness	Typical Value	Unit	Test Method
Rockwell Hardness (M-Scale)	93		ASTM D785

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	50 mm/min	3100 MPa	ASTM D638
		3200 MPa	ISO 527-2/1A/1
Tensile Stress	Yield	91 MPa	ISO 527-2/1A/50
	50 mm/min	88 MPa	ASTM D638
Tensile Elongation	Yield,51 mm/min	6.5 %	ASTM D638

Yield	6 %	ISO 527-2/50
Break,51 mm/min	> 40 %	ASTM D638
Break	> 40 %	ISO 527-2/1A/50
Flexural Modulus	3180 MPa	ASTM D790
	3100 MPa	ISO 178
Flexural Strength	124 MPa	ASTM D790
	118 MPa	ISO 178
Compressive Strength	112 MPa	ASTM D695
Shear Strength	81 MPa	ASTM D732
Poisson's Ratio	0.39	ASTM E132

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact	108	J/m	ASTM D256
	8	kJ/m ²	ISO 180
Unnotched Izod Impact	No Break		ASTM D4812
	No Break		ISO 180

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load ² 1.8 MPa, Annealed, 3.2mm	187	°C	ASTM D648
CLTE - Flow (-50 to 50°C)	4.70E-05	cm/cm/°C	ASTM E831
Glass Transition Temperature	158	°C	ASTM D3418
Specific Heat			DSC
50°C	1450	J/kg/°C	
200°C	2000	J/kg/°C	
Peak Melting Temperature	340	°C	ASTM D3418
Thermal Conductivity	0.2	W/m/K	ASTM E1530

Electrical Properties	Typical Value	Unit	Test Method
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	6.20E+17	ohms-cm	ASTM D257
Dielectric Strength			ASTM D149
0.0500 mm, Amorphous Film	190	kV/mm	
3.00 mm	17	kV/mm	
Dielectric Constant			ASTM D150
60 Hz	3.07		
1 KHz	3.12		
1 MHz	3.1		
Dissipation Factor			IEC 60250
60 Hz	1.00E-03		
1 KHz	1.00E-03		
1 MHz	4.00E-03		

Flammability	Typical Value	Unit	Test Method
Flame Rating			UL 94
0.8 mm	V-0		
1.6 mm	V-0		
Oxygen Index	34	%	ASTM D2863

Processing Information	Typical Value	Unit
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	
Mold Temperature	150 to 180	°C
Drying Temperature	150	°C
Drying Time	4	hr
Front Temperature	370	°C
Middle Temperature	365	°C
Rear Temperature	355	°C
Nozzle Temperature	375	°C
Processing (Melt) Temp	365 to 390	°C

Fill Analysis	Typical Value	Unit	Test Method
Melt Viscosity (400°C, 1000 sec ⁻¹)	410	Pa·s	ASTM D3835

Notes:

- ¹ 5" x 0.5" x 0.125"
- ² 2 hours at 200°C

NFD ADVANCED COMPOSITES

Tepla® T7100

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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