

# Tepla® T8040CF EC

## Material Description:

Tepla® T8040CF EC is a compound based on Polyetherimide(PEI) containing 40% Carbon Fiber. Added features include: Electrically Conductive, Exceptional Processing.

### General

Material Status	<ul style="list-style-type: none"> <li>Commercial: Active</li> </ul>
Availability	<ul style="list-style-type: none"> <li>Asia Pacific</li> <li>Europe</li> <li>Middle East</li> <li>North America</li> <li>Latin America</li> <li>Africa</li> </ul>
Filler/Reinforcement	<ul style="list-style-type: none"> <li>Carbon Fiber, 40% Filler by Weight</li> </ul>
Features	<ul style="list-style-type: none"> <li>Electrically Conductive</li> <li>Steam Resistant</li> <li>Chemical Resistant</li> <li>Heat Resistant</li> <li>Wear Resistant</li> <li>Radiation (Gamma) Resistant</li> <li>Good Dimensional Stability</li> <li>Good Machinability</li> <li>Fatigue Resistant</li> <li>Creep Resistant</li> <li>Flame Retardant</li> <li>High Stiffness</li> <li>UV Resistant</li> <li>Hydrolysis Stable</li> <li>Exceptional Processing</li> </ul>
Applications	<ul style="list-style-type: none"> <li>Hospital Goods</li> <li>Industrial Applications</li> <li>Connectors</li> <li>Dental Applications</li> <li>Aircraft Applications</li> <li>Medical Devices</li> <li>Medical/Healthcare Applications</li> <li>Electrical/Electronic Applications</li> </ul>
RoHS Compliance	<ul style="list-style-type: none"> <li>RoHS Compliant</li> </ul>
Processing Method	<ul style="list-style-type: none"> <li>Injection Molding</li> </ul>

Physical Properties	Typical Value	Unit	Test Method
Specific Gravity	1.44	g/cm <sup>3</sup>	ASTM D792
Density	1.43	g/cm <sup>3</sup>	ASTM D792
Moisture Absorption (24hr, 50% RH)	0.11	%	ASTM D570
Mold Shrinkage			ASTM D955
Flow, 24 hrs	0.01 to 0.05	%	
Across Flow, 24 hrs	0.1 to 0.5	%	
Melt Mass-Flow Rate (MFR) (380°C/6.7 kg)	15	g/10 min	ASTM D1238
Poisson's Ratio	0.4		ASTM D638

Hardness	Typical Value	Unit	Test Method
Hardness, Rockwell M	112		ASTM D785

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus, 50 mm/min	39500	MPa	ASTM D638
Tensile Modulus, 1 mm/min	36000	MPa	ISO 527
Tensile Stress, break, Type I 5 mm/min	275	MPa	ASTM D638
Tensile Stress, break, Type I 5 mm/min	252	MPa	ISO 527
Tensile Strain, break, Type I 5 mm/min	1	%	ASTM D638
Tensile Strain, break 5 mm/min	0.8	%	ISO 527
Flexural Modulus, 1.3 mm/min 50 mm span	33200	MPa	ASTM D790
Flexural Modulus	30000	MPa	ISO 178

2 mm/min	30900	MPa	ISO 178
Flexural Stress, break 2 mm/min	367	MPa	ISO 178
Flexural Stress, break, 1.3 mm/min 50 mm span	377	MPa	ASTM D790
Compressive Strength	222	MPa	NFD Method
Shear Strength	121	MPa	ASTM C 273
Shear Modulus	4665	MPa	ASTM C 273

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact, 23°C	75	J/m	ASTM D256
Unnotched Izod Impact, 23°C	589	J/m	ASTM D4812
Notched Izod Impact 80*10*4, 23°C	6.8	kJ/m <sup>2</sup>	ISO 180/1A
Unnotched Izod Impact 80*10*4, 23°C	33.6	kJ/m <sup>2</sup>	ISO 180/1U
Instrumented Impact Total Energy 23°C	7.2	J	ASTM D3763

Electrical Propertie	Typical Value	Unit	Test Method
Surface Resistivity	4.10E+03	Ohm	ASTM D257
Volume Resistivity	4.50E+02	Ohm*cm	ASTM D257

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.82MPa, Unannealed, 3.2mm	193	°C	ASTM D648
CLTE			ASTM E831
-40°C to 150°C, Flow	2.70E-06	cm/cm/°C	
-40°C to 150°C, Xflow	3.60E-05	cm/cm/°C	

Processing Information	Typical Value	Unit
Maximum Moisture Content	0.02	%
Melt Temperature	380 to 400	°C
Mold Temperature	165 to 180	°C
Drying Temperature	120 to 150	°C
Drying Time	4	hr
Front Temperature	380 to 400	°C
Middle Temperature	380 to 400	°C
Rear Temperature	380 to 400	°C
Back Pressure	0.3 to 0.7	MPa
Screw Speed	50 to 100	rpm

#### 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.

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