

# Heppla® H4000 FR

## Material Description:

Heppla® H4000 FR is a unreinforced Polybutylene Terephthalate (PBT) product.Characteristics include:Flame Retardant,UL94 V-0.

### General

Material Status	• Commercial: Active
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>
Features	<ul style="list-style-type: none"> <li>• Flame Retardant</li> <li>• Heat Resistant</li> <li>• Good Electrical Properties</li> <li>• Oil Resistance</li> <li>• Low Moisture Absorption</li> <li>• Good Dimensional Stability</li> </ul>
RoHS Compliance	• RoHS Compliant
Processing Method	• Injection Molding

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.43	g/cm <sup>3</sup>	ASTM D792
Moisture Content	0.03	%	
Molding Shrinkage - Flow (3.20 mm)	1.8 to 2.4	%	ASTM D955
Water Absorption (23°C, 24 hr)	0.08	%	ASTM D570

Hardness	Typical Value	Unit	Test Method
Rockwell Hardness (R-Scale)	118		ASTM D785

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	3085	MPa	ASTM D638
Tensile Strength	62.7	MPa	ASTM D638
Tensile Elongation(Yield)	6 to 9.8	%	ASTM D638
Flexural Modulus	3085	MPa	ASTM D790
Flexural Strength	105	MPa	ASTM D790

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact(3.2mm)	31.6	J/m	ASTM D256
Unnotched Izod Impact(3.2mm)	841	J/m	ASTM D4812

Flammability	Typical Value	Unit	Test Method
Flame Rating(1.5mm)	V-0		UL 94

Electrical Properties	Typical Value	Unit	Test Method
Volume Resistivity	> 1.0E+16	Ohms·cm	ASTM D257
Dielectric Strength <sup>1</sup> (in Oil)	18	kV/mm	ASTM D149
Dielectric Constant (1 MHz)	3.2		ASTM D150
Dissipation Factor (1 MHz)	0.02		ASTM D150

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	160	°C	
1.8 MPa, Unannealed	71.1	°C	

Processing Information	Typical Value	Unit
Injection Pressure	68.9 to 103	MPa
Processing (Melt) Temp	238 to 271	°C
Mold Temperature	79 to 107	°C

Drying Temperature	121 °C
Drying Time	4 hr
Dew Point	-29 °C

NOTES:

<sup>1</sup> Method A (Short-Time)

**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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