

Tepla® T8100 TF GR

Material Description:

Tepla® T8100 TF GR is a wear-resistant grade of polyamide-imide (PAI). This grade offers an excellent balance of mechanical properties and wear resistance. It offers high tensile strength and modulus with a low coefficient of friction and outstanding wear resistance at both high velocity and high pressure conditions. creep and chemicals. Potential applications for Tepla® T8100 TF GR polyamide-imide include thrust washers, spline liners, valve seats, bushings, bearings, wear rings, cams and other applications requiring strength at high temperature and resistance to wear.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • Middle East • North America • Latin America • Africa
Additive	• PTFE + Graphite Lubricant
Features	• Chemical Resistant • Flame Retardant • High Temperature Strength • Self Lubricating • Wear Resistant • Creep Resistant • High Heat Resistance • Low Friction • Semi Conductive
Uses	• Aerospace Applications • Automotive Applications • Bushings • Industrial Applications • Machine/Mechanical Parts • Rollers • Seals • Transmission Applications • Aircraft Applications • Bearings • Gears • Industrial Parts • Metal Replacement • Sealing Devices • Thrust Washer • Washer
Forms	• Pellets
RoHS Compliance	• RoHS Compliant
Processing Method	• Machining • Injection Molding • Profile Extrusion

Physical Properties	Typical Value	Unit	Test Method
Density/Specific Gravity	1.51	g/cm ³	ASTM D792
Molding Shrinkage -Flow	0.25 to 0.45	%	ASTM D955
Water Absorption (24 hr)	0.33	%	ASTM D570

Mechanical Properties	Typical Value	Unit	Test Method
Tensile Modulus	9300	MPa	ASTM D638
— —	8000	MPa	ASTM D1708
Tensile Strength	120	MPa	ASTM D638
Tensile Stress ¹	134	MPa	ASTM D1708
Tensile Elongation			
Break	2.5	%	ASTM D638
Break	7	%	ASTM D1708
Flexural Modulus			ASTM D790
23°C	8400	MPa	
232°C	5600	MPa	
Flexural Strength			ASTM D790
23°C	212	MPa	
232°C	110	MPa	
Compressive Modulus	4000	MPa	ASTM D695
Compressive Strength	123	MPa	ASTM D695

Coefficient of Friction			
— 1	0.31		ASTM D3702
— 2	0.29		ASTM D3702
— 3	0.15		ASTM D1894
— 4	0.05		ASTM D1894
Wear Factor			ASTM D3702
5.2 MPa, 0.38 m/sec ⁵	14	10 ⁻⁸ mm ³ /N·m	
6.9 MPa, 0.38 m/sec ⁵	14	10 ⁻⁸ mm ³ /N·m	
3.4 MPa, 0.25 m/sec ⁶	26	10 ⁻⁸ mm ³ /N·m	
0.22 MPa, 4.1 m/sec ⁶	35	10 ⁻⁸ mm ³ /N·m	

Impact Properties	Typical Value	Unit	Test Method
Notched Izod Impact	87	J/m	ASTM D256
Unnotched Izod Impact	275	J/m	ASTM D4812

Electrical Properties	Typical Value	Unit	Test Method
Surface Resistivity	4.00E+17	ohms	ASTM D257
Volume Resistivity	8.00E+15	Ohms·cm	ASTM D257

Thermal Properties	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.8MPa, Unannealed	280	°C	ASTM D648
Coefficient of Linear Thermal Expansion	2.50E-05	cm/cm/°C	ASTM D696
Thermal Conductivity	0.65	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, then drop off to 3,000-5,000 psi (20.69-34.48 MPa), for the duration of the hold pressure sequence. Molded parts must be post cured.

NOTES:

¹ Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi)

² Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi)

³ Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi)

⁴ Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi)

⁵ Lubricated

⁶ Dry

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的热熔温度或时间。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。

COMPANY/公司:

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