HOW PA10T ENABLES CONNECTOR BREAKTHROUGHS

特种尼龙 PA10T — 您的 [汽车/电子/通讯连接器] 耐高温解决方案

突破性能边界

Power in Precision

PA10T —— 打破传统工程塑料局限，兼顾耐高温、耐化学、低吸水三大优势的新一代高性能尼龙。它不仅适用于严苛环境，更为您的设计带来无限可能。

PA10T — the next-generation high-temperature nylon that delivers exceptional thermal stability, chemical resistance, and low moisture absorption. Redefine what's possible in demanding applications.

Key Factors	Brief description
卓越高温稳定性	Outstanding High-Temp Stability
超强耐化学腐蚀	Superior Chemical Resistance
极低吸水性 & 尺寸稳定	Ultra-Low Moisture Absorption
高机械强度& 易加工	High Strength & Easy Processing

About Us:

Star Plastics® is a dependable compounder of engineering-grade thermoplastics headquartered in Ravenswood, West Virginia, but with facilities around the world. We are a full-service plastics company known for custom color accuracy, UL-recognized products, and the ability to produce batches of any size.
No job is too big or too small!

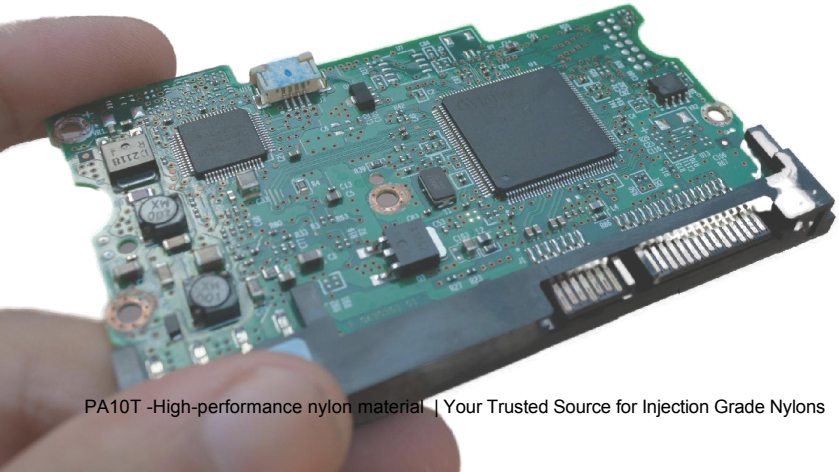
Advantages and Customer Value of PA10T Performance.

PA10T: Performance Redefined

PA10T是以对苯二甲酸和癸二胺为单体, 经缩聚聚合而成, 具有优异的耐热性能，其熔点在316℃，耐化学腐蚀性能，吸水率低，尺寸稳定性好，玻纤增强改性后耐无铅焊锡温度超过280℃，综合性能优异。PA10T也是PA9T的理想升级替代方案，尤其适用于高精度、高温、高湿环境下的连接器应用。相比PA9T, PA10T具有更低的吸水率、更好的尺寸稳定性和更高的焊接耐热性，能显著提升产品可靠性与加工效率。

PA10T is a polycondensation polymer made from terephthalic acid and decamethylene diamine. It exhibits excellent heat resistance, with a melting point of 316°C, outstanding chemical resistance, low water absorption, and superior dimensional stability. When reinforced with glass fiber, it can withstand lead-free soldering temperatures exceeding 280°C, offering a well-balanced set of performance characteristics. PA10T is also a superior alternative to PA9T, especially in high-precision connector applications under heat and humidity. With lower moisture absorption, better dimensional stability, and enhanced soldering heat resistance, PA10T delivers improved reliability and processing efficiency.

性能属性 (Property)	PA10T 优势 (PA10TEdge)	带给您的价值 (Your Benefit)
耐高温性 Heat Resistance	行业领先的热变形温度	保障极端工况零故障运行
	长期高温结构稳定性卓越	显著降低热相关维护成本
	Industry-leading heat deflection temperature	Guarantees zero-failure operation in critical thermal environments
	Unmatched structural stability under prolonged heat	Drastically reduces heat-induced maintenance costs
耐化学腐蚀性	全面抵抗燃油/冷却液/溶剂侵蚀	杜绝腐蚀导致的泄漏与停机
	长期接触化学介质性能无衰减	延长苛刻环境部件寿命
	Complete resistance to fuels/coolants/solvents	Eliminates leakage and downtime from corrosion
	Zero performance loss after sustained chemical exposure	Extends component lifespan in aggressive environments
尺寸稳定性 Dimensional Stability	突破性低吸湿特性	确保精密部件永久可靠装配
	湿度波动中保持微米级精度	消除湿度引发的质量风险
	Breakthrough low moisture absorption	Ensures permanent reliable assembly of precision parts
	Maintains micron-level precision amid humidity swings	Eliminates humidity-induced quality risks
机械强度 Mechanical Strength	超高刚性兼卓越韧性	实现轻量化高负载设计
	抗疲劳特性超越工程塑料标杆	降低结构失效导致的召回成本
	Ultra-high stiffness with exceptional toughness	Enables lightweight high-load designs
	Fatigue resistance surpassing engineering plastic benchmarks	Reduces recall costs from structural failures
良好加工性 Excellent Machinability	与现有尼龙加工设备兼容，易于注塑成型。	降低转换成本，提高生产效率。
	Compatibility of equipment with current nylon processing machines and ease of processing.	Reduce conversion costs and enhance production efficiency



Application In the Market.

PA10T vs. Traditional High-Performance Nylons

与其他短链高温尼龙如PA46、PA4T、PA6T、PA6I、等相比,PA10T具有较长的二胺柔性长链，使得大分子具有一定的柔顺性，从而具有较高的结晶速率和结晶度，适用于快速成型,制作一些小型的电子元器件,比如LED反射支架、连接器等。

Compared to other short-chain high-temperature nylons such as PA46, PA4T, PA6T, and PA6I, PA10T features a longer diamine flexible chain. This molecular structure imparts a certain degree of flexibility to the polymer chains, resulting in higher crystallization rates and degrees of crystallinity. These properties make PA10T especially suitable for fast molding processes and for producing small electronic components such as LED reflector brackets, connectors, and more.

PA10T — The Smarter Replacement for PA9T

PA10T凭借更低的吸水率、更高的尺寸稳定性以及优异的耐热和耐化学性能，已成为PA9T的理想升级替代材料。在满足相同应用要求的同时，**PA10T在长期热稳定性和成型效率方面表现更为出色，尤其适用于对精度、环境耐受性要求更高的电子、电气及汽车部件。**

PA10T with lower moisture absorption, superior dimensional stability, and outstanding thermal and chemical resistance, PA10T is a highly reliable upgrade to PA9T. It meets all the performance demands of PA9T while offering better long-term heat stability and improved molding efficiency—making it ideal for high-precision electronics, E&E components, and automotive applications.

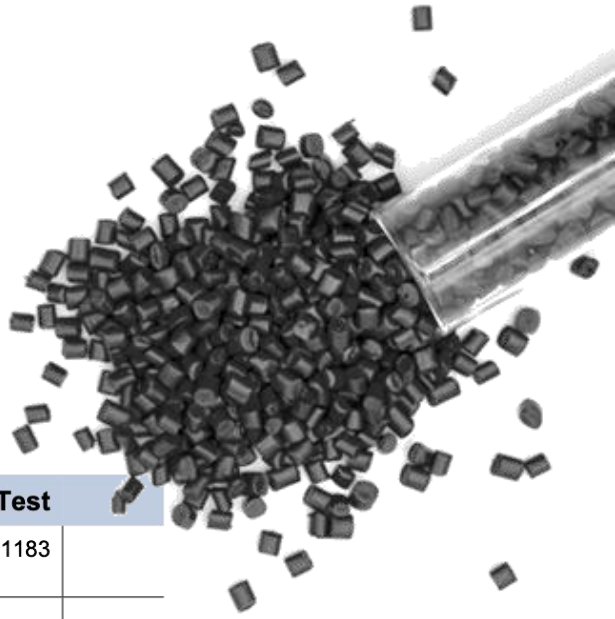
Features	Applicable to Products	Application Cases
耐高温王者: 高熔点、高HDT (热变形温度)，远超PA66、PA6。 强调长期使用温度下的稳定性。 High heat resistance: High MP & HDT, significantly higher than PA66 and PA6. Excellent stability long-term use temperatures.	适用于发动机周边、连接器、SMT回流焊等高温环境，保障长期可靠性,杜绝高温信号失真 Engine peripherals, connectors, SMT soldered high-temp parts	• 5G高频连接器 •汽车引擎电控单元 • 5G high-frequency connectors • Automotive ECU modules
耐化学腐蚀专家: 对各种冷却液、燃油、油脂、清洁剂等优异的耐受性。 Excellent resistance to coolants, fuels, oils, cleaning agents	消除电解液腐蚀风险,延长零部件寿命，减少故障，降低维护成本（尤其在汽车、流体处理领域） Prevents electrolyte corrosion, extends lifespan, reduces failures	• 新能源汽车电池连接器 •工业传感器密封件 • EV battery connectors • Industrial sensor seals
低吸水性&尺寸永恒： 极低的吸湿率，尺寸变化极小。 Low moisture absorption & dimensional stability	保证精密部件的尺寸精度和电气性能稳定性（电子连接器、传感器） Ensures precision and electrical reliability in tight-tolerance parts	• 毫米波雷达接口 •医疗微创器械接头 • mmWave radar ports • Medical micro-device connectors
机械强韧高刚性、高强度、良好的韧性。 High stiffness, strength, and toughness	更轻薄的部件，实现百万次循环耐久 Enables lightweight, durable components	• 无人机快拆插件 •机器人动力线束 • Drone quick-plug part s• Robot power harnesses

Built for Harsh Conditions

由于其分子主链中的苯环结构所带来的刚性和耐腐蚀性等优异性能，PA10T的改性产品也可以应用到一些化学试剂或耐热的环境中，比如水处理、纳米注塑、NMT、发动机周边等。

Moreover, thanks to the rigidity and chemical resistance introduced by the aromatic rings in its main molecular chain, modified PA10T products are also well-suited for use in chemically aggressive and/or high-temperature environments, such as water treatment systems, nano-injection molding, NMT (Nano Molding Technology), and components around engine compartments.

Glass Fiber-Reinforced PA10T Properties



Grade: PPA 7045R NC001
Molding Grade PA10T and 45% Glass Fiber, Flame Retardant and High heat Resistance, Heat Stabilized, RoHS Compliant

Physical	Nominal Values	ASTM Test
Specific Gravity	1.54 g/cm^3	ISO 1183
Mechanical		
Tensile Strength	165 MPa	ISO 527
% Elongation @ Break	1.9 %	ISO 527
Flexural Modulus	13900 MPa	ISO 178
Flexural Strength	245 MPa	ISO 178
Impact		
Charpy Notched Impact (23 °C, 4mm)	9.3 KJ/M^2	ISO 179
Thermal		
DTUL @ 264 psi-unannealed	270 °C	ISO 75
Mold Shrinkage		
Linear Flow	0.2% - 0.7%	ISO 294
Electrical		
CTI	600 V	IEC 60112
UL Rating Flammability	V-0 @0.15mm(Equal)	UL 94

Grade: PPA 7030R NC001
Molding Grade PA10T and 30% Glass Fiber, Flame Retardant and High heat Resistance, Heat Stabilized, RoHS Compliant

Physical	Nominal Values	ASTM Test
Specific Gravity	1.4 g/cm^3	ISO 1183
Mechanical		
Tensile Strength	115 MPa	ISO 527
% Elongation @ Break	1.9 %	ISO 527
Flexural Modulus	9300 MPa	ISO 178
Flexural Strength	180 MPa	ISO 178
Impact		
Charpy Notched Impact (23 °C, 4mm)	9.0 KJ/M^2	ISO 179
Thermal		
DTUL @ 264 psi-unannealed	270 °C	ISO 75
Mold Shrinkage		
Linear Flow	0.2% - 0.9%	ISO 294
Electrical		
CTI	600 V	IEC 60112
UL Rating Flammability	V-0 @0.15mm(Equal)	UL 94