



碳元素(厦门)新材料有限公司

Carbon (Xiamen) New Materials Co., Ltd

基本信息 / Basic information

产品名称	name:	PA66-CF-BCA5
树脂类型	resin type:	聚酰胺-66 Nylon66
纤维类型	fiber type:	碳纤维 Carbon Fiber
纤维含量	fiber content:	50% 碳纤维 50% Carbon Fiber
颜色	color:	黑色 Black
材料特性	material properties:	极端强刚性、耐热性、低吸湿性、低收缩性，适用于半导体设备机械臂部件、航空航天轻型承重件、超跑底盘结构件、高端工业机器人关节部件等极端负荷场景。 Extreme rigidity, heat resistance, low hygroscopicity, and low shrinkage; it is suitable for robotic arm components for semiconductor equipment, lightweight load-bearing components for aerospace, structural components for supercar chassis, joint components for high-end industrial robots, and other extreme load scenarios.

材料参数 / Material Parameters

物理性能 Physical Properties	典型性能 Typical Characteristic	测试标准 Testing Standard
密度 Density	1.34 g/cm ³	ISO 1183
吸水率 Water Absorption	0.1-0.2 %	ISO 2008
成型收缩率 Molding Shrinkage	0.1-0.15 %	ISO 2001
机械性能 Mechanical Properties	典型性能 Typical Characteristic	测试标准 Testing Standard
拉伸模量 Tensile Modulus	34926 MPa	ISO 527
拉伸强度 Tensile Strength	320 MPa	ISO 527
拉伸伸长率 Tensile Elongation	2.0 %	ISO 527
弯曲强度 Flexural Strength	415 MPa	ISO 178
弯曲模量 Flexural Modulus	31158 MPa	ISO 178

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冲击性能 Impact Performance	典型性能 Typical Characteristic	测试标准 Testing Standard
悬臂梁缺口冲击强度 Izod Notched Impact Strength	28.8 KJ/m ²	ISO 179
悬臂梁无缺口冲击强度 Notched impact strength of cantilever beam	216 KJ/m ²	ISO 179
电性能 Electrical	典型性能 Typical Characteristic	测试标准 Testing Standard
表面电阻系数Surface Resistivity	< E2 Ω	ISO 3915-2022
热性能 Thermal performance	典型性能 Typical Characteristic	测试标准 Testing Standard
热变形温度 Heat Deflection Temperature	283 °C	ISO 1634
熔融温度 Melting Point	265-305 °C	ISO 3146
加工处理 Processing and Handling	典型性能 Typical Characteristic	测试标准 Testing Standard
注射压力 Injection Pressure	100-155 MPa	
熔体温度 Melt Temperature	265-305 °C	
模具温度 Mold Temperature	90-110 °C	
干燥温度 Drying Temperature	120-135 °C	
干燥时间 Drying Time	4-6 H	

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材料简介 / Material Introduction

碳纤维是一种高性能增强的复合材料，具有耐高温、抗摩擦、导电、导热及耐腐蚀等特性，

碳纤维的性能取决于其原料及制造过程，生产的产品适用于注塑，压缩和挤出成型的应用。

碳纤维增强复合材料可用航空航天、汽车、体育、建筑、机械、电子电器等领域的应用还将不断扩大。

Carbon fiber is a high-performance reinforced composite material with characteristics of high temperature resistance, anti-friction, electricity conductivity, heat conductivity and corrosion processes, resistance. The performance of carbon fiber depends on its raw materials and manufacturing and the

products are suitable for applications of injection molding, compression molding, and extrusion molding. The application of carbon fiber reinforced composite materials in aerospace, automobile, sports, machinery, electronics and electrical equipment and other fields will continue to expand.

注意事项 / Precautions and Considerations

使用本材料时，应注意避免过度加热或过度剪切，以免损坏材料的性能，选择适合碳纤维的注塑机，压力、注射速度、模具温度等参数应根据碳纤维材料的特性进行调整，碳纤维材料特性，注塑机在使用过程中可能会受到较大的磨损，腐蚀。因此，应定期对机台进行维护保养、确保机台的正常运行和使用寿命。

When using this material, it is important to avoid excessive heating or shearing to prevent damage to the material's properties. It is necessary to select an injection molding machine suitable for carbon fiber, and the parameters such as pressure, injection speed, and mold temperature should be adjusted to the characteristics of the carbon fiber material. The carbon fiber material has unique properties, and according to the injection molding machine may suffer from significant wear and corrosion during use. Therefore, regular maintenance of the machine should be conducted to ensure its normal operation and service life.

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