Chemical Specifications

PA6/66CF10 Filaments

PA6/66CF10 is an FFF 3D printing consumable produced with a copolylactam modified material containing 10% carbon fiber. PA6/66CF10 has excellent dimensional stability and toughness, very good interlayer bonding, and can be used on FFF3D printers in non-heated chambers. It has very good tensile strength and impact strength, and can be used continuously for a long time at an ambient temperature of 120°C.

Main Features：

Dimensional stability/high toughness/high impact/temperature resistance

The main parameters:

|  |  |  |  |
| --- | --- | --- | --- |
| Physical properties | Testing methods | Unit | Typical value |
| Density | ISO 1183 | g/cm3 | 1.15~1.20 |
| Melt index MFR(250℃/2.16Kg) | ISO 1133 | g/10min | 2~4 |
| Water absorption(23℃/24h) | ISO 62 | % | ＜1 |
| Mechanical behavior | | | |
| Tensile strength（X-Y） | ISO 527 | Mpa | 83.5~88.5 |
| Elongation at break（X-Y） | ISO 527 | % | 20~21 |
| Elastic modulus（X-Y） | ISO 527 | Mpa | 1500~1600 |
| Bending strength（X-Y） | ISO178 | Mpa | 140~145 |
| Notched Impact Strength（X-Y） | ISO180 | KJ/m2 | 25~35 |
| Thermodynamic properties | | | |
| HDT@ 0.455 MPa(66 psi) | ISO75 | ℃ | 150 |
| Continuous use temperature | IEC 60216 | ℃ | 120 |

Test Spline Printing Conditions：

|  |  |
| --- | --- |
| Test Equipment | Guider IIS （Flashforge technology） |
| Nozzle diameter | 0.4mm |
| Nozzle temperature | 290 °C |
| Printing speed | 50mm/s |
| Wall thickness | 1.2mm |
| Filling | 100% |
| Standard profile | The specific dimensions are as in appendix 1 |

Recommended Printing Parameters:

|  |  |
| --- | --- |
| Parameter |  |
| Nozzle temperature | 280~300℃(Recommended 290℃) |
| Print platform temperature | 90~120℃(Recommended 100℃) |
| Printing platform materials | Tempered glass，BuildTak，carbon fiber board |
| Nozzle diameter | φ0.4/0.6mm(Recommendedφ0.4mm) |
| Nozzle and feed gear material | High strength steel |
| Model cooling fan | 50~100% |
| Layer thickness | 0.18~0.3mm |
| Printing speed | 40~60mm/s(Recommended 50mm/s) |
| Idle speed | 60~120mm/s |
| Printing ambient temperature | Room temperature ~65℃ |
| Withdrawal length | 2~4mm |
| Withdrawal speed | 30~50mm/s |
| Support material | Self supporting |

Precautions：

To prevent moisture absorption and contamination, the packaging of filaments should be kept airtight and undamaged until they are opened for use. For the same reason, some used filaments should be resealed before storage.

If filaments deteriorate due to moisture absorption, they should be dried before use. It is recommended to dry the filaments in a hot air oven at 80°C for at least 12 hours to ensure the success rate and quality of the printed model.

If using PA6/66CF10 as its own support material, remove the support structure after the model has cooled. Otherwise, the support structure may be glued to the model and difficult to remove.

After the model is printed, it is recommended to dry it in an oven at 80~100°C for 1~3 hours to increase the strength of the model.

Disclaimer：

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Annex 1: Test spline size and printing orientation

