Chemical Specifications

PETG Filaments

PETG is a FFF 3D printing filaments, which is produced with food-grade PETG material as the main raw material. PETG has good dimensional stability, temperature resistance and rigidity, no warping, no cracking, easy to print, and is suitable for FFF3D printers with proximal wire feeding.

Main Features：

Easy to print/Dimensional stability/Temperature resistance

The Main Parameters:

|  |  |  |  |
| --- | --- | --- | --- |
| Physical properties | Testing method | Unit | Typical Value |
| Density | ISO 1183 | g/cm3 | 1.27~1.28 |
| Melt Index MFR(220℃/2.16Kg) | ISO 1133 | g/10min | 4~6 |
| Water absorption(23℃/24h) | ISO 62 | % | ＜0.2 |
| Mechanical behavior | | | |
| Tensile strength（X-Y） | ISO 527 | Mpa | 41.5~44.5 |
| Elongation at break（X-Y） | ISO 527 | % | 10~12 |
| Elastic modulus（X-Y） | ISO 527 | Mpa | 1400~1500 |
| Bending strength（X-Y） | ISO178 | Mpa | 64.5~66 |
| Notched impact strength（X-Y） | ISO180 | KJ/m2 | 5~6 |
| Thermodynamic properties | | | |
| HDT@ 0.455 MPa(66 psi) | ISO75 | ℃ | 74 |
| Continuous use temperature | IEC 60216 | ℃ | 70 |

Test Spline Printing Conditions：

|  |  |
| --- | --- |
| Test conditions | Guider IIS （Flashforge technology） |
| Nozzle diameter | 0.4mm |
| Nozzle temperature | 240 °C |
| Printing speed | 50mm/s |
| Wall thickness | 1.2mm |
| Filling | 100% |
| Standard spline | The specific dimensions are as in appendix 1 |

Recommended Printing Parameters:

|  |  |
| --- | --- |
| Parameter |  |
| Nozzle temperature | 220~240℃(Recommended 230℃) |
| Print platform temperature | Room temperature~80℃(Recommended 70℃) |
| Printing platform materials | Tempered glass，BuildTak，carbon fiber board |
| Nozzle diameter | φ0.4 |
| Model cooling fan | 0~50% |
| Layer thickness | 0.12~0.3mm |
| Printing speed | 40~60mm/s(Recommended 50mm/s) |
| Idle speed | 60~120mm/s |
| Printing ambient temperature | Room temperature ~50℃ |
| Withdrawal length | 1~2mm |
| 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.

PETG filaments tend to absorb moisture, and it is recommended to dry them before use. Dry the filament in a hot air oven at 70°C for at least 5 hours to ensure the success rate and quality of the printed model.

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Annex 1: Test spline size and printing orientation

