Chemical Specifications

PC Filaments

PC is an FFF 3D printing filaments, which is produced with BPA-free PC modified material. PC has the characteristics of high toughness, high strength, and high heat resistance, and can be used on FFF3D printers in non-heated chambers.

Main Features：

High toughness/high strength/high temperature resistance

Main Parameters:

|  |  |  |  |
| --- | --- | --- | --- |
| Physical properties | Testing Method | Unit | Typical value |
| Density | ISO 1183 | g/cm3 | 1.2~1.21 |
| Melt Index MFR(240℃/2.16Kg) | ISO 1133 | g/10min | 3~5 |
| Water absorption(23℃/24h) | ISO 62 | % | ＜0.8 |
| Mechanical behavior | | | |
| Tensile strength（X-Y） | ISO 527 | Mpa | 40~45 |
| Elongation at break（X-Y） | ISO 527 | % | 7~9 |
| Elastic modulus（X-Y） | ISO 527 | Mpa | 1800~1950 |
| Bending strength（X-Y） | ISO178 | Mpa | 83~87 |
| Notched impact strength（X-Y） | ISO180 | KJ/m2 | 4~5.5 |
| Thermodynamic properties | | | |
| HDT@ 0.455 MPa(66 psi) | ISO75 | ℃ | 123 |
| Continuous use temperature | IEC 60216 | ℃ | 130 |

Test Spline Printing Conditions：

|  |  |
| --- | --- |
| Test conditions | Guider IIS （Flashforge technology） |
| Nozzle diameter | 0.4mm |
| Nozzle temperature | 250 °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 | 240~260℃(Recommended 250℃) |
| Print platform temperature | 100~120℃(Recommended110℃) |
| Printing platform materials | Tempered glass，BuildTak，carbon fober board |
| Nozzle Diameter | φ0.4/0.6mm(Recommendedφ0.4mm) |
| 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 | 40 ~70℃ |
| Withdrawal length | 0.3~2mm |
| Withdrawal speed | 30~50mm/s |
| Support materials | Self support |

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.

filaments 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.

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

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Annex 1: Test spline size and printing orientation

