Chemical Specifications

PC/ABS Filaments

PC/ABS is a kind of FFF 3D printing consumable, which is produced by SABIC's PC/ABS alloy material. PC/ABS has the characteristics of high toughness, high strength, high heat resistance and electroplating. It not only has the high impact resistance and high temperature resistance of PC, but also has the excellent electrochemical properties of ABS.

Main Features：

High toughness/high strength/high temperature resistance/platable

The Main Parameters:

|  |  |  |  |
| --- | --- | --- | --- |
| Physical properties | Testing method | Unit | Typical value |
| Density | ISO 1183 | g/cm3 | 1.14~1.15 |
| Melt index MFR(260℃/5Kg) | ISO 1133 | g/10min | 19~22 |
| Water absorption (23℃/24h) | ISO 62 | % | ＜0.8 |
| Mechanical behavior | | | |
| Tensile strength（X-Y） | ISO 527 | Mpa | 43.5~45.5 |
| Elongation at break（X-Y） | ISO 527 | % | 24~26 |
| Elastic modulus（X-Y） | ISO 527 | Mpa | 800~950 |
| Bending strength（X-Y） | ISO178 | Mpa | 71.5~74.5 |
| Notched impact strength（X-Y） | ISO180 | KJ/m2 | 43.5~44.5 |
| Thermodynamic properties | | | |
| HDT@ 0.455 MPa(66 psi) | ISO75 | ℃ | 123 |
| Continuous use temperature | IEC 60216 | ℃ | 130 |

Test Spline Printing Conditions：

|  |  |
| --- | --- |
| Test equipment | Guider IIS （Flashforge technology） |
| Nozzle diameter | 0.4mm |
| Nozzle temperature | 265 °C |
| Printing speed | 50mm/s |
| Wall thickness | 1.2mm |
| Filling | 100% |
| Standard spline | The specific dimensions are as in appendix 1 |

Recommended Printing Parameters:

|  |  |
| --- | --- |
| Paramater |  |
| Nozzle temperature | 250~280℃(Recommended 265℃) |
| Print platform temperature | 90~110℃(Recommended 100℃) |
| Printing platform materials | Tempered glass，BuildTak，carbon fiber 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 supporting, HIPS |

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.

Disclaimer：

Because conditions of use and applicable laws may vary from place to place, it is the customer's responsibility to determine the suitability of the products and product information in this document for the customer's use, and to ensure that their workplace and handling of the product comply with applicable laws and other governmental regulations. The Creation Company assumes no responsibility or liability for the information in this document, nor does it provide any warranty. All implied warranties of merchantability or fitness for a particular purpose under this document are expressly excluded.

Annex 1: Test spline size and printing orientation

