

Technical Data Sheet

PET CF by Innofil3D BV

Filament suitable for all commercially available leading brands 3D FDM/FFF printers

IDENTIFICATION OF THE MATERIAL

| | |
|-----------------|--|
| Trade name | PET Carbon Fiber |
| Chemical name | Polyethylene terephthalate with carbon fiber (15%) |
| Chemical family | Thermoplastic copolymer |
| Use | 3D-Printing |
| Origin | Innofil3D BV |

GUIDELINE FOR PRINT SETTINGS

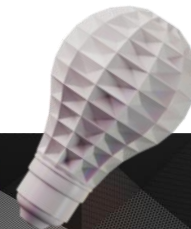
| | |
|------------------------|--------------------------------|
| Nozzle temperature | 250 – 260 °C |
| Bed temperature | 75 °C |
| Bed modification | Clean glass |
| Active cooling fan | 0% |
| Layer height | Minimum of 0.2 mm |
| Shell thickness | 1.2 mm |
| Print speed | 40 – 60 mm/s |
| Additional information | Nozzle diameter 0.6 mm minimal |

Settings are based on a 0.6 mm nozzle

MATERIAL PROPERTIES

| | | Test Method |
|-------------------------------|------------------------------|-------------|
| Melt temperature | 250 °C | ASTM D3418 |
| Glass transition temperature | 74 °C | ASTM D3418 |
| Melt Flow Rate ¹ | 13.2 g/10 min | ISO 1133 |
| Melt Volume Rate ¹ | 10.7 cm ³ /10 min | ISO 1133 |
| Density | 1.23 g/cm ³ | ASTM D1505 |
| Odor | Odorless | / |
| Water solubility | Insoluble | / |

¹Test conditions: T = 260 °C ; m = 5 kg



| MECHANICAL PROPERTIES* | | Test Method |
|------------------------|----------------------|-------------|
| Tensile Strength | 80 MPa | ISO 527 |
| Elongation | 2.5% | ISO 527 |
| E modulus | 9 GPa | ISO 527 |
| Charpy Impact Strength | 40 kJ/m ² | ISO 179 |
| Flexural Strength | 130 MPa | ISO 178 |
| Flexural Elongation | 3.5% | ISO 178 |
| Flexural Modulus | 8 GPa | ISO 178 |

* Data based on information obtained from the raw material supplier(s).

| FILAMENT SPECIFICATIONS | | Test Method |
|-------------------------------|----------------|-------------|
| Diameter 1.75 | 1.75 ± 0.05 mm | Innofil3D |
| Diameter 2.85 | 2.85 ± 0.10 mm | Innofil3D |
| Max. roundness deviation 1.75 | 0.05 mm | Innofil3D |
| Max. roundness deviation 2.85 | 0.10 mm | Innofil3D |
| Net weight on reel | 750 g ± 2% | Innofil3D |

| LIST OF COLORS AND CERTIFICATIONS** | | | | | | |
|-------------------------------------|------|---------|--------------------------|------------------|----------------------|----------------------|
| Colour | Code | RAL nr. | Certifications/approvals | | | |
| | | | 10/2011 ¹ | FDA ² | 2011/65 ³ | EN 71-3 ⁴ |
| Black | 0350 | N/A | | | | |

** This overview is generated using information obtained from the raw material supplier(s).

| Certifications/approvals | Description |
|---|---|
| ¹ Regulation EU No 10/2011: | Union Guidelines on Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food (Europe) |
| ² FDA: | Food and Drug administration approval (U.S.A.) |
| ³ Directive 2011/65/EU: | The restriction of the use of certain hazardous substances in electrical and electronic equipment (Europe) |
| ⁴ Directive 2009/48/EC; EN 71-3: | Safety of toys – Part 3: Migration of certain elements (Europe) |