

# TECHNICAL DATA SHEET

## BIGREP HI-TEMP CF



### DESCRIPTION

BigRep HI-TEMP CF is a filament compound combining the world of sustainable bioplastics with the performance of high-tech carbon fibre technology. It is lightweight, resistant to high temperatures and can be used to create superior stiff and stable parts, including UV resistance. It is highly suited for applications in motorsports, aerospace, sporting goods and medical. As well as applications in moulding and forming technology.

### KEY FEATURES

- Exceptional Mechanical Properties
- High Stiffness
- Lightweight Constructions
- High Temperature Resistance
- UV Resistance

### PERFORMANCE



#### STRESS

Great stress performance and resistance

#### BEND & FLEX

High resistance to bend and flex

#### HEAT

Suitable for temperatures higher than 100°C

#### MECHANICAL RESISTANCE

Exceptional mechanical resistance

#### ENVIRONMENTAL RESISTANCE

UV resistant & weatherproof, medium chemical resistance

#### ECO FOOTPRINT

Recycling and repairing possible

#### SURFACE

Matt surface, post-processable

### PROCESSING

#### Layer adhesion



Minimal tendency to warp. If needed use extra adhesives and/or print slow for first layers

#### Extrusion rate



Normal build rates according to extruder capabilities; ca. 40mm/s

#### Geometries



Fine and complex designs possible, include extra support when printing >50° angles

#### Ease of printing



Printing in open frame is possible for the experience user.

#### Post-processing



Good post-processing with all common technologies. Keep processing temperature in mind when milling, drilling, etc.

Join parts using 2K adhesives or super glue

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### PROPERTIES

|                                    |                        |
|------------------------------------|------------------------|
| Tensile Modulus (ISO 527)          | 7000 MPa               |
| Tensile Strength (ISO 527)         | 65 MPa                 |
| Stress at break (ISO 527)          | 58 MPa                 |
| Impact Strength, notched (ISO 179) | 4.5 kJ/m <sup>2</sup>  |
| HDT / B (ISO 75)                   | 115 °C                 |
| Density                            | 1.20 g/cm <sup>3</sup> |

### REQUIREMENTS & RECOMMENDATIONS

**Nozzle temp.:** 220 - 250°C

**Heat bed temp.:** > 60°C

**Chamber temp.:** n.a.

**Abrasive! Hardened (steel) nozzle & 0.6mm nozzle diameter or bigger is recommended**

**Adhesion:** Suitable on BigRep Kapton print bed foil. **Additional adhesion** using glue, e.g. from Magigoo

**Support structures:** **Break-away** support works well for HI-TEMP CF. For complex geometries a soluble material is supportive too.

**Storage & drying:** Store at room temperature in a dry and dark place. It is recommended to use BigRep DryBOX for best material printability.

**Shelf life:** When stored and dried correctly, this material has a shelf life of min. 1 year

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## **BIGREP HI-TEMP CF**



### **CERTIFICATION & ADDITIONAL INFORMATION**

RoHS, REACH, FREE OF SILICONE, Degradable acc. ISO 14855

Compatibility: BigRep **STUDIO G2** (soon Bigrep ONE and PRO/ACE)

Suitable for: conventional FFF extruders with Abrasive Filament Hardware Set-up

The data mentioned in this TDS, particularly the recommendations for application and use of products are based on our recent knowledge and experience. Due to the fact of having so many different materials involved and conditions of applications which are out of our influence, we strongly recommend doing sufficient tests in order to guarantee that products are suitable for the intended process and applications. Except for wilful acts any liability based on such recommendations or any verbal advice is hereby expressly excluded.