

## **Ultrafuse PET CF 15**

#### Components

Polyethylene Terephthalate based filament filled with 15% carbon fiber for Fused Filament Fabrication.

### Description

PET CF15 is a Carbon Fiber reinforced PET which has precisely tuned material properties, for a wide range of technical applications. The filament is very strong and stiff and has high heat resistance. With its high dimensional stability and low abrasiveness, the filament offers an easy to print experience which allows direct printing on glass or a PEI sheet. It is compatible with HiPS for breakaway support and water soluble support and has an excellent surface finish.

### Delivery form and warehousing

Ultrafuse PET CF15 filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

### **Product safety**

Recommended: Process materials in a well ventilated room, or use professional extraction systems. For further and more detailed information please consult the corresponding material safety data sheets.





# Ultrafuse PET CF 15

| General Properties   |                          | Standard   |
|----------------------|--------------------------|------------|
| Printed Part Density | 1366 kg/m3 / 85.3 lb/ft3 | ISO 1183-1 |

|                              | Standard   |              |
|------------------------------|--|--------------|
| HDT at 1.8 MPa               | 80 °C / 176 °F                                   | ISO 75-2     |
| HDT at 0.45 MPa              | 108 °C / 226 °F                                  | ISO 75-2     |
| Glass Transition Temperature | 79 °C / 174 °F                                   | IISO 11357-2 |
| Crystallization Temperature  | 204 °C/399 °F                                    | ISO 11357-3  |
| Melting Temperature          | 245 °C / 473 °F                                  | ISO 11357-3  |
| Melt Volume Rate             | 25 cm3/10 min / 1.5 in3/10 min (260 °C, 2.16 kg) | ISO 1133     |

| Mechanical Properties   Conditioned specimens |           |                    |                    |                    |  |  |
|---|-----------|--------------------|--------------------|--------------------|--|--|
| Print direction                               | Standard  | XY                 | хz                 | zx                 |  |  |
|   |           | Flat               | On its edge        | Upright            |  |  |
| Tensile strength                              | ISO 527   | 63.2 MPa / 9.2 ksi | -                  | 12.5 MPa / 1.8 ksi |  |  |
| Elongation at Break                           | ISO 527   | 3.7 %              | -                  | 0.5 %              |  |  |
| Young's Modulus                               | ISO 527   | 6178 MPa / 896 ksi | -                  | 2822 MPa / 409 ksi |  |  |
| Flexural Strength                             | ISO 178   | 108 MPa / 15.7 ksi | 145 MPa / 21.0 ksi | 19.7 MPa / 2.9 ksi |  |  |
| Flexural Modulus                              | ISO 178   | 5452 MPa / 791 ksi | 6293 MPa / 913 ksi | 2253 MPa / 327 ksi |  |  |
| Flexural Strain at Break                      | ISO 178   | 3.7 %              | 2.8 %              | 0.9 %              |  |  |
| Impact Strength Charpy (notched)              | ISO 179-2 | 5.4 kJ/m²          | 4.8 kJ/m²          | 0.5 kJ/m²          |  |  |
| Impact Strength Charpy (unnotched)            | ISO 179-2 | 27.8 kJ/m²         | 32.0 kJ/m²         | 1.3 kJ/m²          |  |  |
| Impact Strength Izod (notched)                | ISO 180   | 5.7 kJ/m²          | 5.0 kJ/m²          | 2.0 kJ/m²          |  |  |
| Impact Strength Izod (unnotched)              | ISO 180   | 25.1 kJ/m²         | 22.6 kJ/m²         | 2.4 kJ/m²          |  |  |

