



# Ultrafuse® PPSU

## Welcome to the World of High Temperature Stable Applications!

Ultrafuse® PPSU was specially developed for FFF printing based on BASF's advanced Ultrason® materials. The Ultrason® resins are amorphous thermoplastics derived from polyethersulfone (PESU), polysulfone (PSU) and polyphenylsulfone (PPSU) and ensure very high thermal resistance.

With its wide spectrum of material performance advantages, Ultrafuse® PPSU can be successfully used in applications where other plastics, e.g. polyamide, polycarbonate, polyoxymethylene and polyalkylene terephthalates, fail to meet the performance specifications. With its inherent flame-retardant properties, it is an especially suitable material for the aerospace industry.

### Benefits at a Glance

- Inherently flame retardant
- Short-term temperature resistance up to 220 °C
- Resistant to long-term service temperatures up to 180 °C
- High dimensional stability
- Creep strength at high temperatures
- Resistant to hot water and coolants
- Oil-resistant, even at temperatures up to 170 °C
- Fuel and fluorine resistant

### Example Applications

- Suitable for autoclaving processes
- Aerospace industry
- All applications exposed to high temperatures

### Material Properties

<b>Tensile Strength (MPa)</b>	51.6 (ZX), 65.10 (XY)
<b>Flexural Modulus (MPa)</b>	1999 (ZX), 2152 (XY)
<b>Elongation at Break</b>	3.2% (ZX), 6.5% (XY)
<b>Impact Strength Izod notched (kJ/m<sup>2</sup>)</b>	5.5 (ZX), 12.0 (XY)
<b>Impact Strength Izod unnotched (kJ/m<sup>2</sup>)</b>	14.3 (ZX), 119.0 (XY)
<b>HDT @ 0.45 MPa</b>	218 °C

### Printing Guidelines

<b>Nozzle Temperature</b>	390-410 °C
<b>Build Chamber Temperature</b>	170-210 °C
<b>Bed Temperature</b>	220 °C
<b>Bed Material</b>	BASF fiber-reinforced build sheet
<b>Nozzle Diameter</b>	≥ 0.4 mm
<b>Print Speed</b>	25-50 mm / s

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